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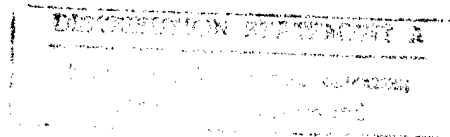
11 August 1982

USSR Report

TRANSPORTATION

No. 91

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MOTOR VEHICLE

ROAD MAINTENANCE LABOR SHORTAGE NOTED

Moscow SOVETSKAYA ROSSIYA in Russian 9 Jun 82 p 2

[Translation of an article by V. Avdevich, correspondent]

[Text] Nearly ninety percent of the road repair personnel working in the Krasnodar Kray highway department are nearing the retirement age and in five to six years many will retire. Who will replace them? The younger generation? I doubt it. The school graduates are avoiding our personnel departments. Why should they come to us when nearly all the technical operations such as pavement repair, installing and washing the road signs, painting and cleaning the bridges, and even cutting the weeds on the shoulders are performed manually. We have gone many times to the Krasnodaravtodor [Krasnodar Road and Highway] Department with requests for the assignment of equipment which would replace the picks and shovels and save manual labor--with no results. (N. Neskromnyy, foreman of the Novokubansk Road Repair Division.)

Aleksandr Sergeevich Petrusenko, head of Krasnodaravtodor, says: "The facts noted by Neskromnyy are no news to me, but can anyone tell me how to mechanize the labor of the workmen if I have in the entire department only one road repair unit. And there are nearly 50 districts, scattered over the vast Krasnodar Kray. We need a hundred combined road repair machines--there are none. We need 80 hydraulic vehicle lifts--there are none. We need 20 road crack filling machines--there are none. Much else is required--but where would you suggest we get all this? From the Ministry? The ministry doesn't react to such requests. Build the equipment ourselves? Well, first of all we are operators and it's not our job to build machinery. Second, even if we tried this approach the capacity of our ten shops is adequate only for repair of the old machines.

We visited some highway divisions of the Krasnodar Kray together with Petrusenko. In the Novokubansk region we met a team of eight men, who were for the third day cleaning by hand the two hundred meter-long bridge across the Kuban River. Petrusenko noted that there are in existence machines which could do this same job in two hours. In the Ust-Labinsk region we observed repair of a road. Twenty eight men were using pry bars to square up potholes.

Then they cleaned and coated the edges with bitumen, heated in a portable boiler. Then they used shovels to place the asphalt mixture, leveled the patch and rolled it with a manual roller. About forty such operations are performed per shift. But there are also machines made for restoring pavement. A unit with a crew of two can replace a team of twelve men.

Petrusenko notes that if a special machine becomes available it will be possible to free more than 500 men from manual labor.

The Krasnodaravtodor situation is typical for practically all the highway departments of the RSFSR. Of the 143 technological repair operations less than half are mechanized. Over 43 percent of the industry workers are occupied in manual labor. Are these facts known in the RSFSR Ministry of Motor Roads?

"Naturally," responded deputy minister V. Mal'tsev, "in 1980 we initiated the development of a comprehensive objective program to reduce the expenditures of manual and heavy physical labor."

As you can well understand, the industry staff continues to hope for changes. But what specifically can we do to make these changes take place as rapidly as possible? M. Pokatayev, director of the labor protection department, told us that during the past seven years the personnel of Minavtodor RSFSR have not once examined or approved specific measures to mechanize mechanical labor in road repair and maintenance. Even the creation of the comprehensive objective program, initiated on the basis of instructions from a higher level, has been delayed somewhat. The original variant was prepared on the basis of the general statistical accounting scheme used in the ministry. This variant had one major deficiency: no specific information on all the technological operations performed manually. Without such basic data it is impossible to determine all the necessary measures. But here the ministry is spending a second year gathering the required data and introducing the necessary refinements to the program.

The industry staff should devote constant attention to the technical equipment which can facilitate the work of the road repair personnel and should accelerate the development and production of new machines. All is not well at the moment in this regard in Minavtodor RSFSR. During the last five year period the industry institute GiprodorNII [State Scientific-Research Institute of Road Planning] prepared 14 studies on the subject "Mechanization of Manual Labor." But only four of these have been put into serious production.

E. Kuptsov, director of the institute, admits: "We are ready to consider even this result to be an achievement. The industrial enterprises of the ministry are extremely reluctant to fabricate experimental models. We cannot build them ourselves: to date we have neither a design bureau of our own nor an experimental plant.

For this reason many models are submitted for testing without adequate preparation and are rejected. The machine development schedules stretch out

over a period of from five to eight years. What do the people in the ministry think about the problems of the industry relating to science?

I. Dvoryaninov, head of the mechanization directorate, retorts: "I don't understand where you see the problem, all of our plants are at the service of the scientists. We always listen to their opinion."

V. Gordeyev, head of a division of the institute, makes a correction: "That's not quite right, it has become a tradition to replace studies on experimental models by search for technical solutions on already completed machines of established production series. In spite of the old saying: "Look before you leap," we seem to be following just the opposite practice.

It is precisely for this reason, as the facts show, that scientific substantiation of new developments is often replaced by administrative expedience. Back in 1977 GiprodorNII prepared the technical specification for trailer-type equipment for repairing pavement. The specialists insisted that the spreader width not exceed 175 centimeters. A commission headed by V. Mal'tsev, deputy minister, decided differently on its own. A larger dimension was written into the technical specification. A year later, when the test model was ready, it was found in the factory tests that the basic tractor could not pull a spreader of this width. And Mal'tsev immediately approved the plan to junk the model. The "experimentation" was a complete loss to the national economy.

The development and production of new models is a costly matter. Additional material and labor costs are unavoidable, labor productivity falls, profits decline, and this means that the funds allocated for economic stimulation decrease. All this doesn't engender any enthusiasm among the economists. The consequence is that the economists have no burning desire to get involved with the development of new models. In 1977 GiprodorNII prepared a technical specification for a mobile asphalt heater. It was four years later that the plant in Mamontovka produced a series of only five units. Production of the unit stopped at this point.

What can we do to make the creation of new machines more advantageous for both the developers and the manufacturers?

Financial stimulation is the obvious answer. For example, compensate for the financial and economic losses which are inevitable in the initial period. There are in the industry joint science and engineering funds for this. However Minavtodorog RSFSR does not have such funds. Why?

A. Lagutin, director of planning and economic administration, explains: "For the formation of the fund we would have to make allocations from our profit on the basis of a special rate. Our ministry has no income sources of its own. The profit from road construction and maintenance is accumulated outside the industry, in the organizations and departments which benefit from the fruits of our work."

The problem is not simple. However a solution must be found. Here, specifically, is what the economists suggest. The creation of a joint fund in the framework of the USSR State Committee for Science and Technology to stimulate research studies and the fabrication of new models in the ministry enterprises which do not have income of their own. The source of this fund could be allocations from the profits of the industrial and transport ministries using the services of the highway infrastructure.

Today, on the basis of the normative requirements for technological operations involved in road repair and maintenance, Minavtodor RSFSR is 48,000 workers short. Lack of workers has given birth to the phenomenon known as "partial repair." In other words, the highway workers are not capable of performing at the proper level all the current technological operations. What is the result? According to the estimates of the specialists nearly 80 percent of the national roads running through this republic are operating today overloaded. This leads to premature pavement failure. In the past five years the expenditures on restoring the main routes were more than 15.8 million rubles--one and a half times as much as was spent on new construction. On the whole nearly 60 percent of the funds released for "highways" are spent on work of this type. It would be far better to carry out preventive and current repair of the roads on established schedules. It has been estimated that proper operation is three times more effective than reconstruction. For this the highway workers must be supplied with an adequate number of special machines. Increase of the number of service vehicles to the normative level would reduce the manpower requirements of the industry by at least 25,000 men. However, the efforts of Minavtodor RSFSR alone are not sufficient. Individual production, which the highway departments of all the union republics have set up, has led to a situation in which there are today about 200 models of machines fabricated specially for highway repair and maintenance. Fifteen types of trucks and seventeen types of tractors are used as the basis for these machines. With such a variety of equipment it is impossible to concentrate production on the basis of specialization and cooperation or have an adequate number of spare parts.

The machines produced in the nonspecialized enterprises fail to meet the modern requirements with regard to both quantity and qualitative characteristics. They wear out more rapidly and fail prematurely. It is quite obvious that the problem cannot be solved without participation of the machine construction ministries.

Minstroydormash [Ministry of Road Machinery Construction], the lead ministry specializing in the fabrication of road machinery, is called on to play the primary role. However, as we have seen, the machines intended for motor road repair and maintenance amount to less than two percent of the Minstroydormash program.

V. Rostotskiy, first deputy minister, explains the situation: "We are not in a position to increase the production of such machines, and capacities of our plants are limited."

This is logical--there is a shortage of capacity for everything. Then it is even more important to produce one new machine in place of ten obsolescent machines. But the new machine should not be inferior to the best world models. The "Unimog" machine, having 200 types of interchangeable and trailer-type equipment for all (without exception) repair operations, was demonstrated at the international display "Stroydormash-81." This machine alone replaces 15 units and frees 6000 workers for other duties. Back in 1966 the SoyuzdornII scientific-research institute developed the technical requirements for such a machine, but the concept languished. What stopped the development? We asked this question of the managers of the departments involved.

A. Nikolayev, minister of highways of the RSFSR, expresses his position: "Our industry badly needs machines of the Unimog type. Since 1967 we have continuously appealed to the machine constructors, asking them to build such a model."

V. Chudin, minister of construction, highway and municipal machine construction, says: "We are not against the development of such a machine, but you must understand our position. It is useless to start on a developmental program before the Ministry of the Automotive Industry works out the production of a special short-wheelbase chassis."

A. Titkov, director of the department of design and experimental studies of the Ministry of the Automotive Industry, notes that: "The customer is not talking to the right people. We produce trucks and passenger cars, while a machine like Unimog is a powerful and particularly strong wheeled tractor. This means that the model should be based on the tractors produced by Minsel'khozmash [Ministry of Agricultural Machinery]."

E. Kalinin, first deputy minister of tractor and agricultural machinery construction, says: "I'm categorically in disagreement; if we start with the technical requirements of the customer (Minstroydormash) the machine must have a speed of up to 60 km per hour. However our wheeled tractors go only half this fast, even when operating without a load."

We see that each manager has his own conclusion, his departmental viewpoint. The debate on Unimog has already lasted 15 years.

Let's summarize the situation. The highway departments of Minavtodor RSFSR are experiencing a severe shortage of manpower. At the same time nearly half the road repair personnel are involved in low-productivity manual labor. The Republic Ministry of Highways is clearly not sufficiently interested in the questions of labor mechanization in road repair and maintenance. The machine builders are not of much help to the highway workers. For example, Minstroydormash is under various pretexts avoiding production of the machines needed by the highway workers. It seems to us that Gosplan USSR and the USSR State Committee for Science and Technology need to make some decisions.

9576

CSO: 1829/248

MOTOR VEHICLE

BRIEFS

THE CAR WE'VE WAITED FOR--The factory tests of a new passenger car model AZLK-2141 have been completed at the Automobile Plant imeni Lenin Komsomol. I would have liked to describe all the new features of this model, but I soon gave up this thought. Everything in the AZLK-2141 is new, other than the improved 412 engine. The fuel consumption has been reduced by 15 percent thanks to several technical innovations. The fifth gear, used here for the first time, has influenced this fuel economy improvement. But let's look at the inside. Not only five passengers but also quite large cargo can fit in freely. This is accomplished by providing a fifth aft door [hatch], and the back passenger seat folds down. Access to the baggage compartment is also through the aft hatch. This compartment is considerably more spacious than in the Moskvich, since the spare wheel has been removed. Still ahead for the new model are the government acceptance tests and the complex and tedious process of preparation for production. And then--the factory production line. [Excerpt] [Moscow TRUD in Russian 1 May 82 p 2] 9576

FUEL CONSUMPTION CUT--The specialists of the Central Scientific-Research Automobile and Automotor Institute [NAMI] are carrying out several studies directed toward improving the economy of the vehicles produced by the Moscow auto plants. A whole series of studies is being devoted to the problem of economical use of fuel in the ZIL and Moskvich models. Thus, several variants of the use of methanol in both pure form and mixed with gasoline are being tested. The NAMI workers have resolved to complete the tests of the ZIL-130 engine operating on the economical methanol scheme ahead of schedule, by the seventh of November. Improvement of the design of the engines and the other "components" of the modern motor vehicle is playing a prominent role in the institute development plans for this year. Many of the studies are being conducted together with the production innovators of the Likhachev and Lenin Komsomol auto plants. The recommendations of the scientists, introduced in the enterprise shops, will aid in the development this year of more fuel efficient ZIL and Moskvich models, both the new models and the versions which have been in production for some time. [Text] [Moscow MOSKOVSKAYA PRAVDA in Russian 6 Apr 82 p 2] 9576

PULSE OF KAMAZ--Electronic clocks rhythmically mark the pulse of the KamAZ [Kama Truck Plant] main production line. The multithousand crew has set the goal of producing four hundred trucks a day. The giant truck plant of the Kama has quite rightly been called a national construction project. Representatives

of seventy peoples and nationalities of the nation participated in its construction and are now participating in reaching the design capacity. The production association is creating a technical base of great capacity in order to better exploit the growing motor vehicle fleet. Centralized engine overhaul has been organized. A large plant is being built for restoration of the basic vehicle components. Construction of an enterprise for spare parts production is underway. Overhaul plants will also be erected in Tashkent, Novyy Oskol and Kustanay. KamAZ vehicles have taken over a considerable part of the shipping performed by motor transport in the RSFSR, Kazakhstan and other republics. More than 60,000 drivers of these trucks are competing to cover over 300,000 kilometers without a major overhaul. [Text] [Moscow IZVESTIYA in Russian 30 Apr 82 p 1] 9576

ELECTROBUS IN OPERATION--Riga. The Riga Motor Bus Plant has produced the first commercial series of electric passenger buses. The new Latvia RAF-2210 will be used in Moscow as a main-route taxi. The machine runs at up to 60 km per hour, which is quite adequate for in-city operation. A battery charge lasts for 70 kilometers. The Riga designers are working on new modifications of the electrobus. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Apr 82 p 1] 9576

TWO MILLIONTH ZIL-130--The first experimental models of these trucks were produced by the ZIL workers in 1962. In 1974 the millionth ZIL truck rolled out the factory doors, and yesterday the two millionth unit was produced. The ZIL models are somewhat like twins, but they also differ. Over the years more than 200 improvements have been made in the design of the machine, and engine service life has nearly doubled. A meeting was held in the plant yesterday in honor of this great achievement. Simultaneously with the rollout of the two millionth machine, five experimental truck models operating on liquified natural gas and also five diesel trucks were delivered for production testing. [Text] [Moscow TRUD in Russian 8 May 82 p 1] 9576

YEREVAN RUBBER PLANT--Yerevan. A new supplier for the Kama and Volga auto plants has emerged. The Yerevan Technical Rubber Goods Plant is fabricating the first shipment of articles for the nation's giant auto plants. A shop with planned capacity of 700 tons of various rubber parts per year has been put into operation in Yerevan. [Text] [Moscow GUDOK in Russian 4 Apr 82 p 1] 9576

UNIVERSAL KRAZ--Kremenchug. The basic KrAZ-260 vehicle is the progenitor of a new family of heavy cargo trucks of the Kremenchug Auto Plant. The first commercial models of such trucks rolled off the KrAZ production line yesterday. This is a van-type all-terrain vehicle with three driving axles. Although its cargo capacity has been increased by nearly two tons the specific metal content has been reduced in comparison with the machines previously produced. This is the result of design improvements and the use of plastics, glass-reinforced plastics, and advanced rolled profiles. Additional driver amenities have also been introduced. [Text] [Moscow SOTSIALISTICHSKAYA INDUSTRIYA in Russian 24 Apr 82 p 1] 9576

BULK CEMENT TRUCK--The TTs-2A cement transport truck is a special tractor/trailer rig and is intended for transporting bulk cement in a sealed tank from major storage facilities to cement plants. The rig consists of the KrAZ-258B1 saddle-type tractor unit and a semi-trailer tank body. In contrast with the existing production bulk cement haulers, an aeration-type unloading unit is installed in the tank, which makes it possible to increase the tank volume utilization factor and improve the unloading efficiency. The manufacturer is the Slavyansk Construction Machinery Plant (343205 Slavyansk, Donetskaya Oblast, ul. Mezhevaya, 1). [Text] [Moscow STROITEL'NAYA GAZETA in Russian 19 Mar 82 p 3] 9576

NEW TIRE PLANT--The requirements of Kazakhstan and the Central Asian republics for tires for the basic forms of wheeled transport are being satisfied by the Chimkentshin [Chimkent Tire] production association. The last of the four production complexes, specialized in the delivery of tires for trucks and agricultural machines, was put into operation yesterday. This completes the construction of the first phase of the petrochemical giant. [Text] [Moscow PRAVDA in Russian 9 Jan 82 p 1] 9576

100,000 TRUCK TRAILERS--The Kama Auto Plant workers have delivered trailer rig unit number 100,000. This is the number of truck bodies which have rolled off the Stavropol Truck Trailer Plant production line in the last five years. Assembled into truck-train units, they make possible maximal productive utilization of the high-power cargo trucks. [Text] [Moscow KRASNAYA ZVEZDA in Russian 4 Apr 82 p 1] 9576

NEW BRIDGE--The new highway bridge at Vitim, the first bridge on the famous Ugra River, has been opened to traffic. The personnel of Mostostroy-9 Trust, in which representatives of various nationalities work, completed ahead of schedule the main item of their socialist pledges in honor of the 60th anniversary of the formation of the USSR. Reliable motor vehicle traffic between the western and central segments of the BAM [Baykal-Amur Main Line] is now possible. [Text] [Moscow KRASNAYA ZVEZDA in Russian 25 Apr 82 p 1] 9576

CSO: 1829/248

RAILROAD

PROGRESS, PROBLEMS IN CONSTRUCTION OF SURGUT-URENGOY LINE DISCUSSED

Moscow GUDOK in Russian 23, 24 Feb 82]

[23 Feb 82 p 2]

[Article by GUDOK correspondent V. Ardayev from Surgut: "The Main Line Hurries to the North. There is Nothing More Permanent than Temporary Structures"]

[Text] GUDOK correspondent Vladimir Borisovich Ardayev has begun work at the Sverdlovsk Railroad. His first report is from the new construction site on the Surgut-Urengoy line.

It seems that it was only recently that the first track layers from "Tyumenstroyput" [Tyumen Track Construction Association] arrived in Urengoy, and new track sections were in the future.

But rails alone don't make a railroad. The construction workers have a considerable amount of work ahead, to erect industrial and office structures, power engineering plants, municipal facilities, living quarters, cultural and social welfare facilities.

Another section of the route is planned to begin operations in 1983. This will involve many kilometers of track, tens of stations and separate points. It will be a sizeable addition to the facilities of the youngest division on the Sverdlovsk Railroad! But immediately the first question arises: are the Surgut railroad workers prepared for such an addition?

If you ask A. Pokidov, chief of the track department, whether he remembers how the Surgut Division originated, he will certainly smile: "Of course I remember! I myself, you might say, delivered the 'baby'. The 'infant' was difficult. I can see as though it were happening now, how the division put the Dem'yanka-Surgut section into temporary operation. The celebration took place in a barracks which had been hastily put together--that was where our division office was located in the early days. The furniture was elegant:

we sat on boxes. I think that only Bokov, the chief of the new division, had a chair. And candelabras were brought in a few minutes prior to the celebration because the light had gone out."

Yet, that's how it was. They had barely managed to build the steel tracks as far as Surgut, when it was time to run trains to Nizhnevartovsk. Already at that time, in 1978, the railroad was extremely necessary for the extractors of Urengoy gas. Thus the construction workers had to move forward quickly and the operational workers had to set up uninterrupted delivery to the northeastern Tyumen' region of pipes for oil and gas pipelines, drilling rigs, equipment and building materials for new enterprises, settlements and cities.

Taking into account the particular importance of the task and the lack of time, it was decided to organize a new division on a track section which had not actually been completed. There were no station buildings, passenger terminals, or car and locomotive repair shops. There were almost no permanent housing facilities, ORS [Department of Workers' Supply] buildings or cultural and social welfare facilities. Less than half the switching tracks, freight yards and sidings were finished. And the quality of the tracks themselves was briefly characterized thusly: there were 139 warnings in effect about the need to limit speed on the 133 kilometers of the line from Dem'yanka to Surgut.

And all these facilities had to be assimilated while carrying out stepped-up plans for transport. Life demanded this. It was needed. "That is such a short word: "needed"!"

Four years have passed. The workers of the young division have justified their hopes. Today this is the leading collective on the Sverdlovsk Railroad and has been a repeated victor in socialist competition.

Wide-scale unloading of cars has been organized in the Surgut Division. The fleet of locomotives is increasing. The track maintenance workers are performing good labor. Even during this winter of snowstorms, trains have not been delayed one time because of snow. The safety rating of the tracks has improved greatly.

However, no matter whom you talk with, a conversation about these successes very quickly switches over to problems. And you understand the kind of efforts which the Surgut railroad workers must make to achieve labor victories under those conditions in which they still have to live and work.

The division got its own locomotive repair shop, or more exactly, the first phase of the shop. One could barely fit four metal-working lathes in the shop or squeeze a forge and welding department in the building.

A polyclinic has gone into operation, but there is still no hospital. In the meanwhile, A. Marochkin, chief physician in the rail line's hospital, has to put patients in a structure which isn't adapted to medical purposes.

Everything else must be viewed with reservations. As before, the construction workers are lagging behind, as far as the railroad workers are concerned. Out of 11 switching tracks on the second phase of the Dem'yanka-Surgut section, only 2 have been built. There are no permanent terminals for passengers in Surgut or in Nizhnevartovsk. Nor are the proposed goods' stores, repair shops, water works or centralized traffic control in existence. There are no permanent dining-halls, bathhouses or recreation clubs for the locomotive crews.

There is a real problem with the boiler houses. They were built as temporary structures, with a low-power capacity, and have remained as such. The Surgut railroad workers bitterly joke about this matter: "there is nothing more permanent than temporary structures." Even in the kindergarten there is not enough heat. During the winter, the thermometer mostly ranges between 30 and 40 degrees in these places; but often it drops to 10 degrees.

It isn't hard to guess about the problems engendered by these difficulties today. The carrying capacity on the Dem'yanka-Surgut section is half the level required for volume of transport. This shortfall is because so far, the switching tracks of the second phase have not been finished. A large number of rail cars leaving Surgut have not been repaired, since there is no car repair shop there. Tens of bulk oil tank cars, in short supply, constantly stand idle on the sidings--they are being used as storage tanks because fuel storage facilities have not been built.

Production discipline is remaining at a low level because there is no housing. Personnel problems are becoming more acute. I spoke with many residents of the "rolling stock" and they said: "It's annoying! A beautiful city for the oil workers sprang up next to us. You walk through that city and your heart is gladdened: there are wide streets, multi-story houses, department stores, cafes, a restaurant. But the railroad workers are 4 kilometers from the city and almost everything with them is as it was during the first arrival."

It is very disturbing that the pace for eliminating "unfinished business" is not being increased. Quite the contrary. From year to year, less and less housing is being built. In 1978, the railroad workers received 37,000 m² of living space; the next year, the total was 20,000 m²; in 1980 it was 8,000m². True, this year the total is a little over 10,000 m². "Tyumenstroyput" regularly ruins the plans for acquiring funds at the division's sites. The "incompletion" wanders in documents from year to year.

A. Bokov, chief of the Surgut Division, and I. Naroditskiy, chairman of the rayon committee of the Railroad Transportation Worker's Trade Union, are not giving any rest to the construction workers or to M. Borodanov, chief of "Tyumenstroyput". They are raising questions at all sorts of levels about completing the long-term construction projects, since there are many commissions here of varying degrees of importance. But aside from promises, the railroad officials are receiving practically nothing.

Thus, the young division, which is getting ready to put into operation a new rail line, has more than enough problems.

People might ask: "Why enumerate the needs of the operational workers and the 'past sins' of the construction workers, while telling about the state of affairs on a shock-work project?" But as the saying goes: you can't understand the present without understanding the past. The Surgut Division will expand from year to year. And it is very important, while continuing the work, not to repeat the mistakes which were allowed at the beginning. Otherwise, incomplete projects and the ensuing difficulties will cause new complications in the operation of the developing railroads.

The question of how to solve all these problems which have arisen cannot be answered clearly, without familiarizing oneself with the affairs and problems of the construction workers themselves. But that will be the topic of my next article.

[24 Feb 82 p 2]

[Article by GUDOK correspondent V. Ardayev from Khanymey and Surgut: "The Main Line Hurries to the North. Tracks Alone Do Not Make a Railroad"]

[Text] The Surgut-Urengoy railroad, which is under construction, somehow resembles a gigantic 600 kilometer conveyor belt which improves from day to day. And if one travels from Urengoy to Surgut along the main line which is already constructed, then one can follow the stages of the railroad's birth.

Khanymey Station is at the 278th kilometer. Today it is minus 47 degrees and windy at the station.

A. Basov, chief of the lead repair and recovery train, number 36, is distressed: "The situation is bad. Equipment is standing idle. The wind hinders crane operations, and the solar oil in the diesels will freeze. But the men are working."

The first GOREM [advance repair train] group, consisting of six persons, arrived in the taiga in March 1977. Track assemblers G. Samatov, A. Todyshev, and carpenter V. Naumenko are still working in the same area. They began with construction of a temporary settlement, including housing, a bakery and a kindergarten. So today, all train workers have been provided housing. There are no small cars in the settlement, and only those men who are working on the line live in the small cars. The remaining workers are in block and panel cottages (one can hardly compare this with the daily life of the Surgut railroadmen). A permanent settlement is being built: a dormitory, two block houses, a vegetable storage area and offices for the kindergarten.

Much more manpower was sent to construct the station's industrial zone: the zero cycle of the boiler room was finished, a fuel oil pump house was built and the buildings of the step-down substation were readied. A garage and depot for hand cars are being built.

But of course, the construction workers consider their main task to be building tracks. Just during last year, they laid 110 kilometers of main tracks and 13.5 kilometers of tracks in stations.

Building tracks is not only the basic task of the construction workers. It is also the most capital-consuming work, adding a large share to the plan for acquiring funds. That is why the managers of GOREM-36 and other subdivisions of "Tyumenstroyput" [Tyumen' Track Construction Association] are striving to get a few more "tidbits"--expensive construction of tracks--while compiling plans for contractor operations.

From the standpoint of work organization, it is difficult to call the stationing of GOREM-36's units efficient. They are spread out over the entire route for 500 kilometers. Just a vanguard unit is located hundreds of kilometers from its base station. It is inconvenient, but profitable.

However, is the pursuit of a ruble really inoffensive? Kogolmskaya Station is at the 91st kilometer on the railroad being built. I recall that the Ul't-Yagun-Noyabr'skaya section, which is 201 kilometers long, is to be put into permanent operation next year. The workers from Construction and Installation Train-524 [SMP-524] are developing the station's track facilities; they are erecting offices and production buildings; and they are building a permanent settlement for the railroad workers. As is recognized by I. Laptev, chief of the construction and installation train, there is a serious problem confronting the train. The "money" work is ending: not only track construction, but also erecting zero cycles, installation and setting of frames for buildings. The time of "thankless" finishing work is arriving for the construction workers: a lot of manpower is needed, but funds are acquired kopeck by kopeck.

Igor Federovich says: "We are hoping for help from the managers of our association, 'Tyumenstroyput'. We are reckoning on there being a suitable volume of work for us, so that the plan for acquiring funds can also be fulfilled, simultaneously with finishing work and improvements to public facilities."

Here is something which is not inoffensive. In the year prior to the activation of the new section, according to the elementary logic of the situation, all the construction workers' efforts should have been concentrated on completing the projects which were to be turned over for operational use. But the managers of the construction enterprises were forced to seek work "on the side".

Incidentally, let us note that at Kogolym'skaya and Noyabr'skaya stations, where 2 SMP's are being deployed right away--SMP-329 and SMP-269--there is not a single building which is more or less ready to be turned over for operation use. Finishing work has not been started in a single one of the buildings under construction. At the same time, here and there piles are being driven into new foundations--the zero cycle is money work!

The rails went as far as Urengoy and turned to the west. Track construction is near completion on many sections of track. And the train managers are starting to search for other profitable work. But the "cheap" erecting of offices, production buildings, municipal facilities, housing, cultural and social welfare facilities, recedes into the background, as before.

Such dissipation of resources is already making itself felt now. Here is an example. Train number 124/123 from Tyumen' to Khanymey is included in the official schedule, published last May, for passenger train traffic on the Sverdlovsk Railroad. However, until now, Noyabr'skaya Station has been the terminal point for the trains. What is the reason? The workers of SMP-329, while "pulling out" the profitable jobs, did not bother with the final finishing work for the tracks on the Noyabr'skaya-Khanymey line. Based on the results of the last surveys, the rating of these tracks is about 7000!

And there are worse instances. Due to dissipation of the construction workers' manpower on the Surgut-Urengoy route, the new facilities of the Ul't-Yagun-Noyabr'skaya section were cut back. At the same time, the crucial survival systems at the stations were excluded: boiler rooms, purifying structures, locomotive facilities, ORS [Department of Workers' Supply] buildings. And again there are promises to complete all the unfinished work in the near future, again the railroad workers receive temporary structures which, as they have become convinced in Surgut, are more permanent than anything one could imagine.

I. Naroditskiy, chairman of the Surgut rayon committee of the Railroad Transportation Workers' Trade Union, says: "We have calculated that a minimum of 20 years is needed to solve the housing problem just in Surgut, with the current pace of construction!"

V. Timofeyev, deputy chief of the "Tyumenstroyput'" Association, expressed this categorical opinion: "I think that there is only one solution: we must transfer construction of all civil structures and a number of production facilities to another independent general construction organization."

There is probably a certain rationale to V. Timofeyev's proposal. But before they request help "from outside", the managers of the association should seek out their own unused reserves. Look what happens! Year in, year out, "Tyumenstroyput'" over-fulfills the plans for construction of railroad tracks. Freight routes are moving ever closer to the North. But the farther the lead track layers advance, the more construction of everything else lags behind.

I think that it is time for the construction workers to seriously tighten up their support elements. Today this is hindered by the dissipation of manpower as well as the absence of any sort of specialization or subdivision in constructing various kinds of facilities.

As regards money volumes, those jobs are also more than sufficient. Just take the development of spur tracks for client-enterprises. A most important

task! Due to the small freight handling area in the temporary operations division, the Sverdlovsk Railroad today was forced to retain as many as 30 trains carrying crucial freight.

Yes, the main line is hurrying to the North. But rails alone do not make a railroad.

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RAILROAD

INEFFICIENCY IN TRANSPORTING COAL, AGRICULTURAL PRODUCTS, OTHER COMMODITIES SCORED

Moscow ZHELEZNODOROZHNYI TRANSPORT in Russian No 11, 81 pp 64-68

[Article by V. I. Zubarev, chief of Shipment Planning Directorate, Freight Main Administration, Ministry of Railways: "Rationalization of Shipments--A State Task"]

[Excerpts] Basic Results

In the 10th Five Year Plan considerable work was conducted on the rationalization of shipments, reduction of transportation expenditures, improvement of transportation-economy ties, strict observance of schemes for normal routings of freight flows, and the disclosure and elimination of inefficient shipments from detailed monthly plans. Operating schemes for the normal routings of freight flows for 256 types of cargoes were worked out again and reviewed. More than 300 such schemes are now operating in accordance with which about 80 percent of the cargoes are being shipped.

Certain work has been conducted on expanding exchange operations of interchangeable products between enterprises of various ministries and departments and the concentration of cargo flows of mass shipments on dispatch and arrival. Thus, as a form of exchange Soyuzglavles [Main Administration for Supply and Sale of Timber Products with Gossnab USSR] annually includes up to an additional 500,000 cubic meters of timber materials in centralized deliveries, which correspondingly reduces the volume of inefficient shipments and frees approximately 10,000 railroad cars.

Purposeful work on reducing inefficient shipments is being conducted by commissions on the coordination of the operation of various types of transportation. They constantly monitor the conduct of measures for the rationalization of shipments. In turn, local party organs give them effective assistance. On the recommendation of the Central Committee of the Ukrainian Communist Party and the Council of Ministers of the Ukrainian SSR, during the last two years of the 10th Five Year Plan alone more than 2 million tons of cargo were shifted to motor transportation from railroads.

We should note the favorable experience of the Belorussian SSR in shifting short-run shipments of cargoes from railroad to motor transportation, and excessively long motor shipments--to railroad transportation with consideration of the effective sphere of activity of each of them. This interchange occurs without the additional involvement of the fleet of railroad cars and motor vehicles. As a result, with the complete satisfaction of requirements for shipments the savings in transportation expenditures was 45,000 rubles per year.

During the years of the 10th Five-Year Plan the relative reduction in the volume of inefficient shipments by railroad transportation was 150 billion ton-kilometers. However, with the establishment of economic ties and specialization and cooperation of production the transportation factor is still not considered in many respects. Many branch ministries and departments are not adopting proper measures for the reduction of inefficient shipments. As a result, in the 10th Five-Year Plan the task of Gosplan USSR and Gossnab USSR for the reduction of inefficient shipments was under-accomplished by 28 billion ton-kilometers. According to data of the Interdepartmental Commission on the Rationalization of Freight Shipments with Gosplan USSR, in 1980 of 199 planned measures to reduce inefficient shipments, only 92 were accomplished by the Ministries of Ferrous Metallurgy, Timber, Pulp and Paper, and Wood Processing Industry, Chemical Industry, Fertilizer Production, Procurement, Petroleum and Gas, and Construction Materials Industry.

An analysis of freight flows, data on the average distance of shipments, changes in the level of transportability, and a study of the balances of the production and consumption of raw materials and finished production which was accomplished when working out new schemes for the normal routings of freight flows showed that now railroads are accomplishing more than 300 billion ton-kilometers of inefficient transportation work.

Ways for Reduction

Let us examine the existing situation with the inefficient shipments of a number of the most important types of cargoes as well as possible ways for the reduction and elimination of such shipments.

Coal. During the last 10 years, significant changes have occurred in the nature and structure of coal shipments, which complicated significantly the work of railroad transportation. In comparison with the 9th Five-Year Plan, in the 10th the average distance of coal shipments increased by more than 100 kilometers, which required the additional involvement of more than 30,000 gondolas in its shipments.

The increase in the distance of coal shipments was caused, first of all, by the accelerated development of the coal industry of Siberia and Kazakhstan and the increase in coal shipments from the eastern regions to the European part of the country. Thus, from the Kuznetsk Basin and Kazakhstan, in the indicated direction the volume of coal shipments during the years of the 10th Five-Year Plan increased more than one-and-one-half fold. For example, 7 million tons of Kansk-Achinsk and Cheremkhovo coal moves to Western Siberia and, at the same time, about 500,000 tons of coal from the Kuznetsk Basin are sent to the rayons of Krasnoyarsk. Chita energy-producing coal of the Kharanor deposit is shipped in the amount of 700,000 tons over a distance of up to 3,000 kilometers to Khabarovskiy and even Primorskiy krais. At the same time, 40,000 tons of Sakhalin brown coal are brought in for the Chita TETs. Coal from the Donets Basin is traditionally sent to the rayons of the Center, in particular to the Igumnovskaya and Yaroslavskiy TETs's in the amount of 1.4 million tons. But in connection with the fuel shortage in the Ukraine, Kuznetsk energy-producing coal has been sent here for many years already. In 1980 alone 5.2 million tons were brought in.

As a result of the insufficient development of the coal-tar chemical industry in the Urals and in Western Siberia, coking coal is shipped to the Ukraine from the Kuznetsk

Basin and Kazakhstan, and 1.5 million tons of coke are sent back to the Urals, to Kazakhstan, and to Central Asia. Very many such examples can be presented.

The elimination of inefficient coal shipments depends to a great extent on the Ministry of Power and Electrification of the USSR. In our opinion, for these purposes a program for reequipping the transportation and boiler facilities of electric power plants for the reception of coal from closer coal basins should be worked out. Soyuzglavugol' [Main Administration for the Supply and Sale of Coal with Gosstab USSR] can render great assistance in putting in order deliveries of fuel for municipal and domestic needs and a number of boiler and electric power plants and industrial enterprises by attaching them to the nearest points for the extraction of coal.

A reduction in the inefficient ton-kilometer work with coal shipments is attained by its concentration. However, in 1980 the plan for processing coal at concentration plants was underaccomplished by 9.8 million tons and, at the same time, the content of rock and other impurities in the coal increased by 1.3 percent in comparison with 1975. As a result, in 1980 railroad transportation shipped an additional more than 10 million tons of unnecessary rock.

Ferroconcrete articles. Inefficient shipments are permitted in significant volume in transporting ferroconcrete articles. In 10 years, their production in the country increased 1.4-fold, and railroad shipments increased 5.8-fold with the simultaneous increase in distance by 50 percent. The growth in volume and distance of shipments of this output led to an increase in freight turnover by approximately 60 billion ton-kilometers, which increased operating expenditures by 24 million rubles per year.

Now the output of ferroconcrete articles is being accomplished by 6,000 enterprises and 150 union and republic ministries and departments. In virtually every oblast, kray, and republic there are enterprises for the manufacture of ferroconcrete articles. In striving to ensure the construction of their installations with ferroconcrete articles from plants which are within their jurisdiction, ministries and departments consider the transportation factor poorly. Dissociation and the absence of centralized distribution of ferroconcrete articles engender inefficient shipments coming from opposite directions.

For example, 1.7 million tons of ferroconcrete articles are sent to the Moscow Railroad from virtually the entire territory of the European part of the country including from the October, Belorussian, Baltic, Southwestern, Southeastern, Kuybyshev, Southern, Pridneprovsk, and North Caucasus Railroads. At the same time, time, 4.6 million tons of such articles are hauled from the Moscow Railroad, including to all the indicated roads. Each year, 600,000 tons of ferroconcrete articles are hauled from the Gorkiy Railroad to various regions of the country and 1.4 million tons of these articles are sent from numerous remote points. They arrive from the northwestern region, the Ukraine, Kazakhstan, and Central Asia. Each year, about 1.1 million tons of ferroconcrete articles are also hauled from regions of the North Caucasus and the Transcaucasus and 1.6 million tons are brought in.

Two thousand tons of ferroconcrete piles manufactured by the "Kievzhelezobeton" [Kiev Ferroconcrete] association of the USSR Ministry of Road Construction are shipped to the Pridneprovsk Railroad and, at the same time, 7,000 tons of such piles per year

are shipped to the Southern Railroad from the "Krivorozhzhelobeton" [Krivoy Rog Ferroconcrete] production association.

The expediency of creating a central organ for the distribution of departmental resources of ferroconcrete articles of a broad general-construction category and their exchange between enterprises of various departments as well as the implementation of measures to improve the specialization of plants proceeding from the more complete satisfaction of local requirements is obvious. This is confirmed by the effective work of the supply administrations which have been created, such as Soyuzglavles with Gosnab USSR and the Goskomnefteprodukty [State Committee for Petroleum Products] which are occupied with the centralized distribution of resources of timber and petroleum products.

Special attention is also merited by the question of placing plants for the production of ferroconcrete. Calculations confirm the efficiency of replacing long-distance shipments of ferroconcrete by shipments of the components which comprise it (sand, gravel--up to 80 percent of the weight) which are shipped over a distance of more than 300 kilometers, and ferroconcrete articles almost 800 kilometers. A reduction in the distance of shipments of ferroconcrete through an improvement in the placement of plants will reduce operating expenditures of transportation by 30-50 million rubles per year.

In our view, great assistance in regularizing economic ties to provide the construction industry with ferroconcrete articles can be rendered by local councils for coordination of transportation work on the basis of use of the analysis of data on inter-regional exchange which are made available by railroads and a study of the specialization of operating plants which has developed.

Timber cargoes. Now more than 60 ministries and departments and 12 Gosplans of union republics are engaged in the distribution of timber resources and timber products. Such separation is one of the basic reasons for the emergence of inefficient transportation-economic ties. For example, the Ministry of Agriculture of the Uzbek SSR, having organized logging sectors in Novgorodskaya and Ivanovskaya oblasts, instead of accomplishing exchange operations with Soyuzglavles presents timber for shipment to the Central Asian Railroad from the October and the Northern Railroads opposite to the mass flow of timber from the Urals and Siberia to the European part of the country. Enterprises of the Ministry of Transport Construction send up to 2,000 cubic meters of lumber per year from the Northern Railroad to regions of Western and Eastern Siberia, Kazakhstan, and Central Asia opposite to the mass flow of timber cargoes.

There are many facts where enterprises of one ministry receive timber while those of another department ship similar varieties of timber from this same station. Thus, the Asha wood chemical plant of the Ministry of the Timber, Pulp and Paper, and Wood Processing Industry of the USSR receives 43,000 tons of logs per year from Asha Station of the Kuybyshev Railroad and, at the same time, the Asha timber management of the Ministry of Agriculture of the RSFSR ships 23,000 tons of logs from this same station. We can present many more examples of the inefficient transportation-economic ties caused by the branch principle of planning timber deliveries.

To improve the supplying of the branches of the national economy with timber cargoes and ensure the accomplishment of assignments for the procurement and shipments of timber and elimination of inefficient shipments, in our view, it is expedient to concentrate completely the resources of timber being procured and processed in Soyuzglavles with Gosstab USSR.

The situation with the hauling of timber can be improved substantially by increasing its shipments over water routes of communication. The majority of the enterprises for the production of pulp and paper products are located on navigable rivers. Naturally, when they were constructed their supply with raw materials was envisaged primarily by water routes. However, now only 30 percent of the total volume of the enterprises' requirement for timber materials are provided by water transportation. Thus, the Balakhna pulp and paper combine is located on the Volga, and the suppliers of technological chips and pulp bolts gravitate toward the Volga, Kama, and Vyatka river basins, and 60 percent of the raw material for it is brought in by railroad. The situation is similar to the delivery of raw material to the Syas', Kaliningrad, Kondopoga, and several other pulp and paper combines as well as to the Astrakhan', Volgograd, and Saratov hydrolytic plants.

The insufficient use of water routes of communication for the transportation of timber is confirmed by the fact that during the last five-year plan its shipments were reduced by 3.7 million tons--19.3 percent--in vessels and by 11.7 million tons--18 percent--in rafts.

All this shows that the problem of the delivery of timber cargoes to enterprises on the rivers by water transportation should be solved jointly by planning and supply-sales organs, the Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, and the transportation ministries.

Petroleum products. Unjustifiably long, opposite, and other inefficient shipments of petroleum products arise due to shortcomings in the specialization of their production by variety, underutilization of the capacities of petroleum product pipelines, lagging in their construction, and the poor introduction of dispensers at the refineries.

For example, the Baky refineries do not ensure the output of gasoline Mark A-76 in the necessary quantity. As a result, gasoline of this mark is brought in to regions of the North Caucasus, Georgia, and Armenia from Volgograd, Saratov, and even Kuybyshev refineries over a distance of 1,500-2,500 kilometers. At the same time, Baku refineries are producing gasoline Mark AI-93 in amounts which exceed the requirements of the Transcaucasus and ship it to the republics of Central Asia.

Gasoline Mark A-72 produced by the "Groznefteorgsintez" [Groznyy Industrial Association for Processing Oil and Production of Organic Synthesis Products] is sent to the Ukrainian SSR, and gasoline produced at this republic's refining enterprises is shipped in the opposite direction.

A similar situation developed with shipments of motor fuel in 1981. Thus, "Krasnodarnefteorgsintez" [Krasnodar Industrial Association for Processing Oil and Production of Organic Synthesis Products] reduced motor fuel production almost eight-fold, which made necessary the delivery of this product to consumers of the North Caucasus from "Orsknefteorgsintez" [Orsk Industrial Association for Processing Oil and Production of Organic Synthesis Products] as well as from the Gur'yev oil

refinery over a distance of up to 2,000 kilometers. Conversely, the increase in the production of motor fuel in "Omsknefteorgsintez" [Omsk Industrial Association for Processing of Oil and Production of Organic Synthesis Products] causes its excessively long shipments from Kombinatskaya Station of the Western Siberian Railroad with consignment to the Northern and October Railroads a distance up to 4,000 kilometers. Thus, the reduction of motor fuel production in some regions and its increase in others engenders excessively long inefficient shipments of this product.

To reduce excessively long and opposite shipments of petroleum products, it is necessary to make a deeper study of the requirements of individual regions of the country for petroleum refinery products so that specialization of the refineries considers the requirements of the gravitating regions for liquid fuel.

The volume of shipments of petroleum products over short distances has increased recently. Thus, in 1980 16.5 million tons of the basic types of petroleum products were carried a distance of up to 50 kilometers, which is 43 percent more than in 1975. Paradoxical versions of shipments arise here. Thus, petroleum products for enterprises of the city of Angarsk are first hauled in tank cars by railroad to Irkutsk to the bulk plant, and then from this plant are sent back to the city of Angarsk by motor transport.

Cement. The level of cement production to a great extent determines the development of the construction industry. In 1980, its output reached 123.7 million tons, and consignment over railroads was 99 million tons. Here, the mean distance of the cement shipments increased by almost 20 kilometers in comparison with 1979.

The increase in distance is caused by the fact that a number of enterprises did not accomplish assignments for the production of cement and the putting of capacities into production. Thus, the underaccomplishment of these indices by the Navoi plant caused additional shipments of about 1 million tons of cement to the Uzbek SSR from regions of the Urals, Siberia, and the Volga, the distance of these shipments comprising 2,500 kilometers. Due to the lagging in construction of works for the packing of plugging cement in Western Siberia, it must be delivered from the North Caucasus, Volga, and Western Siberian Railroads. Here, the distance of the shipments is more than 2,000 kilometers.

Cement is delivered to Tyumenskaya oblast from 14 plants in the country. In our opinion, to eliminate inefficient shipments of cement the necessity to review the program for the production of its special types with consideration of satisfaction of the requirements of gravitating regions and the organization of the construction of grinding units for the processing of clinkers in Surgut, Nadym, and other remote points has become urgent.

It would also be expedient to examine the question of reducing the number of marks of cement being produced. Now 35 marks of cement are being produced in the country.

Agricultural cargoes. The decisions adopted at the 26th CPSU Congress determine the further accelerated development of the agrarian-industrial complex and the development and realization of the food program.

The increase in the gross harvest, purchases, and procurements of agricultural produce caused a corresponding growth in shipments by railroad transportation. In the 10th Five-Year Plan, in comparison with the 9th these shipments increased by 83.4 million tons, including grain by 17.7 million tons, potatoes, vegetables, and fruits by 11.2 million tons, sugar beets by 6.5 million tons, and cotton by 400,000 tons.

In the 11th Five-Year Plan, along with a change in the structure and location of agricultural production by zones and regions of the country the production of grain, cotton, sugar beets, potatoes and vegetables, fodder, and meat is increasing significantly. All this imposes special demands on railroad transportation for the timely delivery of produce to the consumers without losses. The successful accomplishment of the tasks assigned by the 26th Congress will depend to a great extent on improvement in planning and rationalization of shipments of agricultural cargoes and the coordinated work of transport workers and branch ministries and departments.

There are now substantial shortcomings in the deliveries of agricultural produce. Thus, due to a shortage of elevator capacities in the Volga region, Central Chernozem region, and Western Kazakhstan and the oblasts of the Southern Urals each year considerable repeated, opposite, and other inefficient shipments of grain are accomplished. In 1980, according to the plans of the Ministry of Procurement of the USSR, opposite grain shipments were accomplished. Altogether, for this reason transportation accomplished 2.5 billion ton-kilometers of inefficient transporting work.

Analysis showed that opposite shipments of flour and grain are accomplished due to the irregular location of enterprises of the milling industry and its insufficient development in the republics of Central Asia and the Transcaucasus, in Siberia, and in the Far East. About 1 million tons of flour are delivered to the republics of Central Asia from the central oblasts and the Volga region and 200,000 tons to the republics of the Transcaucasus, and grain is sent from Siberia, the Urals, Kazakhstan, and the North Caucasus to the regions from which flour is transported.

And another example. One and a half million tons of grain are brought to the milling enterprises of Moscow from regions of Kazakhstan, the Southern Urals, North Caucasus, and the Volga region. After its processing more than 600,000 tons of flour are sent from Moscow in the opposite direction primarily to the same regions.

The necessity for the accelerated construction of milling enterprises and elevator facilities in regions of stable grain procurement is obvious.

Railroad transportation accomplishes a considerable volume of sugar beet shipments over short distances from beet points at the rails to the sugar mills. In 1979 and 1980, about 19-21 million tons of all the beets procured were shipped, including approximately 7 million tons over a distance of up to 50 kilometers and about 8 million tons up to 100 kilometers. Here, due to additional handling of the beets at the beet points considerable losses and a worsening of its quality were permitted.

Thus, in the period of the harvesting campaign beets are transported from the fields to the beet points by motor transport, and then in the opposite direction by railroad.

To reduce transportation work and eliminate excessive handling of this produce the administrations of the railroads, together with the enterprises of the food industry and local councils on the coordination of the operation of various types of transportation, should work out optimum schemes for beet shipments.

Coordination of the Work

Mastery of the growing volume of shipments requires the improvement of all types of transportation and the coordinated work of its individual elements. Here, it is very important to ensure the conduct of economic studies of the structure and patterns of shipments on each railroad in local service and in inter-railroad patterns, and to develop a clear plan for the cooperation of various types of transportation and the current and long-range distribution of shipments between them proceeding from the spheres of their most effective use and special features of operation. All this will contribute to the cooperation of the enterprise-shippers and the recipients with each type of transportation and will orient them on the corresponding development of transportation facilities.

In the 10th Five-Year Plan, the mean annual volume of shipments of cargoes was 99.7 million tons in direct railroad service. In 1981, it is planned to shift a total of 104.3 million tons of cargoes from water transportation to railroad and from railroad to water transportation. For a further increase in the rates of growth of shipments in the railroad-water service, it is necessary to develop ports, piers, and especially commercial moorages.

One of the most important preconditions for the successful development of the Western Siberian oil and gas complex is the efficient use of this region's transportation system. In our opinion, a review of the specialization of the ports and fleet of the Ob'-Irtysh basin is required in order to accomplish the transshipment of cargoes in the river ports which are closest on the line of travel.

An analysis performed in the Shipment Planning Administration of the Ministry of Railways showed that a change in the specialization of ports and the fleet according to the calculated patterns of the 2d and 3d quarters of 1980 would permit reducing the runs of the railroad cars by 380 kilometers and, accordingly, the transportation work of railroad transportation by 800 million ton-kilometers and releasing rolling stock for the additional loading of 500,000 tons of various cargoes with the same amounts of transfer to water transportation for each of the ports of the Ob'-Irtysh basin. The change in the specialization of the ports will permit reducing the freight traffic of the Tyumen'-Tayga railroad route due to the elimination of opposite shipments of cargoes to the ports.

On the whole, in the field of cooperation with other types of transportation the task consists of developing in every possible way direct shipments first of all and eliminating additional transshipments of cargoes from one type of transportation to another and the losses of material valuables and delays in the delivery of cargoes connected with this.

Railroad transportation now transports 375 million tons per year over a distance of up to 50 kilometers and more than 1,200,000,000 tons up to 200 kilometers. An analysis of network data on the distribution of shipments of the basic groups of cargoes over

short distances by transportation schemes showed that it is more effective to ship more than 300 million tons by motor transport.

With an annual volume of shipments of more than 6 billion tons general purpose motor transportation receives a small volume of cargoes from railroads. Thus, in 1980 about 6.4 million tons of short-run shipments of various cargoes were transferred from railroad to motor transportation. The transfer of the same volumes (6.5 million tons) of short-run shipments from railroads to motor transportation is envisaged in 1981, which is clearly insufficient. At the same time, many motor transportation enterprises express the desire to deliver cargoes over a distance of more than 300 kilometers parallel to the steel mainlines.

According to calculations of the All-Union Scientific Research Institute of Railroad Transportation, with consideration of production conditions and the adaptability of transportation and freight-handling devices, about 100 million tons of cargoes per year can be transferred to motor transportation even now. This will permit increasing the average daily productivity of a railroad car by 0.7 percent and freeing shipment equipment for the transportation of more than 30 million tons of cargoes to inter-regional patterns, accelerating significantly the delivery of produce, reducing expenditures on the packaging of cargoes and the accomplishment of freight-handling work, and reducing the volume of the commodity mass along the line of travel.

It should be noted that recently the planning and supply organizations and branch ministries have accumulated certain experience in work on the expedient cooperation of railroad and motor transport. In this regard attention is also deserved by the broad distribution of the experience of the Belorussian SSR. Gosplan BSSR and Gossnab BSSR and scientific organizations of railroad and motor transportation disclosed short-run railroad shipments which are gravitating toward motor transportation and long-distance motor shipments which, according to economic indices, it is expedient to accomplish by railroad transportation, and they coordinated with the Belorussian Railroad and the Minister of Motor Transport of the BSSR the volumes of cargo shipments for mutual switch-over within limits of effective zones for the employment of each type of transportation. The transferring of shipments from one type of transportation to another is accomplished within volumes which correspond to the number of freight cars and motor vehicles which are released from inefficient shipments, that is, without the additional involvement of rolling stock. The value of this experience is that it showed broad possibilities for the disclosure of inefficient shipments at the stage of planning deliveries of cargoes and additional reserves for the increase of economic indices of work of interacting types of transportation.

The correct distribution of shipments between motor and railroad transportation and the indices of their operation depend to a great extent on the rates. It is known that motor transportation is most effective with shipments of cargoes over short distances, and perishable, food cargoes and several other types of consumer goods--over distances of 200-300 kilometers. It is obvious that rates for shipment should orient the shippers namely on such use of motor transportation, and the indices of operation should reflect the number of tons shipped or delivered to the recipient.

Freight-Flow Schemes

An important role in questions of the rationalization of shipments belongs to schemes of normal routings of freight flows; here, special significance is had by their development, review, and introduction. Economists have calculated that on the

average the development and introduction of one scheme provide the national economy with an effect equal to 500,000 rubles.

The working out of new schemes for normal routings of freight flows and the review of those in operation require great economic and research work. At present, 50 schemes of freight flows are reviewed or worked out anew during the year on the average; here the period for the review of the schemes is 6 years. However, under conditions of progressive development of our country's economy, and especially of the regions of Western and Eastern Siberia, Kazakhstan, and the Far East, this period is very long.

According to calculations of economists, the schemes of freight flows should be reviewed every 3-4 years, and for agricultural produce--virtually annually in accordance with the prospects for the harvest. Up to now, obsolete schemes for normal routings of shipments continue in effect. Thus, schemes for cast iron pipes were approved back in 1956, for thin-sheet, roofing, and transformer steel--in 1969, and for plywood raw materials--in 1971.

The wider use of computer equipment is necessary to work out and review schemes for the normal routings of freight flows. Such work is conducted especially fruitfully in the Moscow Institute for Railroad Transport Engineers. The institute has been engaged for more than 10 years already in improving the technology for drawing up schemes with the use of computers. Up to now, 120 schemes of freight flows have been worked out, including for such cargoes as ferroconcrete slabs, Formalin, granulated slag, technical oleum, fluxes, technological limestone, and others. It should be noted that these schemes are being introduced on railroad transportation and in planning and supply organs virtually without revision.

On the basis of network diagrams of normal routings of freight flows on railroads, intra-railroad schemes are being worked out and introduced, especially for such cargoes as sand, gravel, construction brick, ferroconcrete articles of a general construction category, limestone, industrial raw material, agricultural produce, and many other cargoes of local production and consumption.

It is very important that the process of working out and reviewing schemes be progressive and that their introduction not be delayed. The personnel of the Shipment Planning Administration of the Freight Main Administration, Ministry of Railways, and the freight services of the railroads see this as their main task.

Important tasks in the field of rationalizing shipments are facing railroad personnel. It is important that the struggle against inefficient shipments of individual cargoes be conducted on all routings. First of all, it is necessary to increase the responsibility of each subdivision. In particular, personnel of stations who directly prepare the reception or readdressing of cargoes are required to check the conformance of the shipments presented with the schemes for the normal routings of freight flows. When accepting cargoes, they should verify whether a similar cargo is arriving at the same time. In turn, the divisions should study thoroughly the economic ties of the enterprises located within the limits of the division, working out recommendations for transferring shipments to other types of transportation and, jointly with the shipping enterprises, should examine and solve problems in improving economic ties. At the same time, the freight services should strictly

monitor the accomplishment of measures for the rationalization of shipments of cargoes which are approved each year by Gosplan USSR and Gossnab USSR. The clear-cut accomplishment of these tasks will permit eliminating the generation of excessively long and, at times, opposite shipments and reducing transportation expenditures on the delivery of national-economic cargoes.

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RAILROAD

JUNCTION PROBLEMS ON TRANSSIBERIAN DISCUSSED

Problems at Tayshet Highlighted

Moscow GUDOK in Russian 20 Apr 82 p 1

[Article by V. Kurkov: "Operation 'Junction'"]

[Excerpt] Tayshet. On Saturday, 18 April arrived in Tayshet at 5 o'clock in the evening, local-time or at 1200, Moscow-time. Such is the railroad calendar: a day begins on its eve. At the selector meeting, A. Dolgiy, first deputy chief of the East Siberian Railroad, evaluated the division's operational work. The Tayshet Division was the only one to receive a high evaluation; A. Dolgiy said that "the situation in Tayshet is absolutely normal."

They say that everything in the world is relative. Transportation is no exception. If one compares the present train situation with the situation in other divisions of the East Siberian Railroad, then Tayshet certainly looks like a "winner." Even if one compares the Tayshet of today with the Tayshet of summer when navigation begins on the rivers of Siberia, when the flow of passenger trains increases and track maintenance workers go out to work on open stretches of track, then once again the situation in the railroad's division is almost superb. But is Tayshet, as one of the critical junctions on the Transsiberian Railroad, carrying out the norms prescribed by the traffic schedule? As they say, that is a hard question.

Stations--particularly major junction stations--with a large volume of freight and classification operations will smoothly accept and dispatch trains if a large number of conditions are present. These conditions include: if all participating organizations are at full personnel strength; if neighboring organizations operate without narrow, parochial subterfuges; if there is a locomotive and a locomotive crew for every readied train, and so on. However, the situation characterized as being absolutely normal, was not, in fact, normal. You can't enumerate everything which isn't being inserted into the norms and rules. But one must say something.

D. Druzhinin, the division duty officer coming on the night shift, counted the electric locomotives: there was a shortage of four locomotives. Within three hours, the shortage was six. Such is the situation with electric locomotives at Tayshet, which is a locomotive turn-around point for the Bratsk and Abakan lines. Tayshet returns as many locomotives to those lines as arrive from them.

And electric locomotives from several depots operate on the main tracks, with only the crews being replaced. Moreover, electric locomotives are supposed to proceed through Tayshet without being uncoupled, but that is not always the case: sometimes locomotives go in for unscheduled repair. But that is not the main problem. It is the lack of parity between the even and odd flow of trains that is the main problem. There 5 to 10 more trains dispatched westward to Krasnoyarsk than arrive from that location. According to existing rules, excess electric locomotives, particularly those sent to an adjacent main line, are to be returned without a reminder being necessary. And in particular, there is not to be any intervention by higher offices. However, the neighboring workers at Krasnoyarsk operate differently. They retain electric locomotives for themselves. And when they are forced to submit to a stern command from above, they do not nearly return all the locomotives. From 1 to 18 April, a total of 27 electric locomotives were not returned to Tayshet from Krasnoyarsk. In March this total was 17 locomotives.

Does the Main Administration of Traffic know about this lack of discipline? Of course! But what measures are being taken? Here is a telegram from the Ministry of Railways, dated 11 April and signed by Comrade Godun, deputy chief of the administration: "To form a reserve of locomotives at the Tayshet junction and on the main tracks, the TsD [central dispatch] of the Ministry of Railways requires the diversion to the Abakan Division of trains bound for..." Destinations followed, for which the Abakan-Novokuznetsk maneuver was an appreciable deviation.

But the Abakan Division also blames everything on Krasnoyarsk, and the workers at Abakan also delay reception of trains, only by a different method. They simply do not allow Tayshet to open the departure traffic signals for them, since block signalling permits this to be done.

After the night shift, when half the accounting day had passed, D. Druzhinin, duty officer for the Tayshet Division, said that "to normalize the situation, I was required to dispatch four trains westward through Abakan. Both the trains and electric locomotives from Abakan were available. We asked the neighboring line to take just two through-trains, but we received permission to send only one."

But really, where is it written how many trains can be diverted? And in what situation can they be diverted? There was no such information in the telegram from TsD. The telegram did not even include a disciplinary word such as "I order."

But apparently the problem is not in words, but in their meaning. So why shouldn't the main administration insist upon fulfillment of its requirement? Are they waiting until Tayshet halts traffic?

After all, a situation has arisen at Tayshet which is obviously abnormal. On this day there was a shortage of approximately 30 electric locomotives for the actual amount of traffic in the division overall. And of course, this shortage is felt most keenly at the junction, an inter-railroad junction.

Yes, on this Sunday, there were enough "scenes" which, when observed, made it difficult to call the train situation absolutely normal. One scarcely has to describe all of them. However, I will talk about one situation. At about 2 o'clock, Moscow time, an hour before the day shift came on duty, a heavy through-train of tank cars arrived from Krasnoyarsk. The train had travelled only 250 kilometers from point of loading and a considerably shorter distance from the last PTO [technical servicing point]. One would have to suppose that the car maintenance workers at both stations had inspected the train and prepared it for travel. But what had they done? It turned out that 24 cars needed to be "hoisted," since the bearings were too hot. Three cars in all had to be uncoupled for major repairs. Also, about 15 shoes and brake blocks had to be replaced. The work was labor-intensive, so the night shift could not finish the work in an hour. And the train did not depart quickly during the day. Either because there really was a lot of work to be done or because there was a manpower shortage on the shift--only 18 men instead of the 30 required for production work--, the through-train stood idle for more than 3 hours, instead of the planned 40 minutes.

If you judge according to the totals for trains dispatched and received at this junction, then the picture is not so bad: a train or two going here or there is no cause for alarm. But there is something else which causes concern. First of all, even in such a situation, which was far from being critical, there was a lack of precision and smooth operation. Secondly, it is difficult to orient oneself to the numerous plans: one does not immediately understand which plan takes precedence or which figure to use in a report. And there are three plans: the first is assigned by the train traffic schedule, the second is the monthly technical plan and the third is the day's requirement. All three are different. And the actual work per se is a fourth figure, which is rarely similar to even one of the three assigned plans.

Train dispatchers say: "There are too many contingencies."

Yes, that's correct, there are a lot of contingencies. But why are there "too" many of them?

Follow-up on Problems at Tayshet

Moscow GUDOK in Russian 14 May 82 pp 1, 2

[Article by GUDOK correspondent V. Kurkov from Tayshet: "The Transsiberian Main Line: A Junction of Solvable Problems. (Returning to Operation "Junction")"]

[Text] Any special journalistic assignment, as a photograph, freezes a moment. On 20 April, GUDOK published a group report by our correspondents about train interchange at the Tayshet rail junction during a 24-hour period. Of course, relying on a single day's facts makes it difficult to fully understand an occurrence, to reveal the main reasons for traffic interruptions or to make well-argued proposals about how to achieve a precise traffic rhythm. And the editors assured the readers that they would return to Operation "Junction" and the situation in Tayshet.

Tayshet is one of the critical junctions on the Trans-siberian system. Besides the chief lines of the Trans-siberian Main Line, Tayshet adjoins such important lines as the Abakan line, which has an outlet to the Southern Kuzbass [Novokuznetsk Coal Field], plus the Bratsk-Lensk line (the western section of the Baykal-Amur Main Line). And finally, when the East Siberian Railroad was divided into two separate railroads, the rail junction went through Tayshet. Thus a bundle of complex problems arose. The correspondent's report, published today, deals with how to untangle the junction and to quickly resolve, in a comprehensive manner, the problems and questions which have arisen.

It is easy to become a victim of circumstances, especially when they change suddenly and abruptly. When we are taken unawares by new situations, we often begin confusing cause and effect. Now it seems that passions have cooled and practically no one disputes the necessity of establishing new rail lines--Kemerovo and Krasnoyarsk--on the Transsiberian Main Line. Time itself has already dotted many "i's." But it is hard to form unambiguous judgments about changes. One must still familiarize oneself and get used to the new; one must thoroughly analyze the changes.

Of course, it was not easy to break through fixed ideas and relationships which have formed through the years. Reorganizing the junctions was most difficult of all. And this reorganization has not yet been completed. For example, for a long time, the workers of the West Siberian and Kemerovo railroads were unable to agree about the rail junction at Bolotnaya. As a result, a critical Siberian classification station--Inskaya--began to "clog up." The workers said: "The junction is to blame, it is too close to Inskaya. A hundred kilometers is too close." But later, when cooperation at the junction got organized and Inskaya began operation smoothly, the real reason was found. It turned out that the junction was not to blame, rather, it was lack of cooperation at the junction. After the reorganization, mutual reproaches changed to mutual respect and everything operated as planned. I am oversimplifying the situation somewhat. There were still some complications at Bolotnaya. But these were no longer problems, but practical issues which are quite solvable.

The situation is more complicated at Tayshet, which is the rail junction of the Krasnoyarsk and East Siberian railroads. However, there have been many changes for the better in Tayshet as well. Here is a characteristic example which shows that there are no insoluble problems and that it is easy for a "hothead" to confuse cause and effect.

About a year after the two Siberian railroads had been split into four railroads, when matters on the East Siberian Railroad were going especially badly, the MPS [Ministry of Railroads] instructed a group of scientists from the Novosibirsk Scientific Research Institute of Rail Transport (NIIZhT) to analyze the causes of complications in operational work on this main line, particularly at the key points--Tayshet and Irkutsk. A thorough analysis was made. The causes of the

sharp decline in operational work on the railroad were designated. Some of the causes were not connected with a recent reorganization. Many of the recommendations were put into practice and a restructuring began immediately, which included major construction. However, a hasty conclusion was drawn in the group's report.

The East Siberian Railroad (within its previous boundaries) was renowned in the rail network for the precise organization of its electric locomotive work in huge areas: along the main tracks from Mariinsk to Zima and along the Mezhdurechensk-Abakan-Tayshet-Lena route. The lack of parity between even and odd flows of trains, which existed even then, did not hamper the work, since the dispatchers and managers of the railroad skillfully regulated the pool of electric locomotives by dispatching the locomotives as a reserve, in a timely manner. After the railroad was split into two lines, that kind of regulation became a problem; the rail workers at Krasnoyarsk were not very willing to return electric locomotives. And Tayshet settled for a "starvation ration of electric locomotives."

A characteristic peculiarity of the Tayshet junction is that, as distinct from many new junctions, the problem of additional tracks is not so acute. A regular, smooth interchange of trains could become the norm if there were always enough electric locomotives at the junction to dispatch trains on the main tracks. The problem is that more trains are formed at Tayshet than arrive from the west.

As you see, the cause of the interruptions was, as they say, on the surface: electric locomotives must be returned as a reserve from Krasnoyarsk to Tayshet. It is also obvious from the technical plan for interchange of trains, how many locomotives must be returned every day, taking into account the difference between odd and even traffic flows. The group of scientists from the NIIZhT should have made the neighboring organizations as well as the Main Administration of Traffic pay attention to this problem. However they drew a different conclusion. They recommended that large tractive arms be renounced.

This conclusion was supported with this "irrefutable" argument: after the East Siberian Railroad was divided, excessive runs prior to placing electric locomotives on TR-1 [expansion unknown] increased three-fold in a year! An alarming situation! However, can all the blame for this be put on the Krasnoyarsk Railroad where, as it was said, locomotives "disappear?" It would seem not. That is because everything came up to standard in a year and excessive runs became rare occurrences. We must give credit to the managers of the East Siberian and Krasnoyarsk railroads: they did not hasten to implement the scientists' recommendation. The problem was corrected in a different way by their joint efforts.

However, the problem of sending locomotives to haul trains out of the Tayshet junction remains acute. This was also noted in our report about Operation "Junction." Our reasoning is as follows: for Tayshet to function smoothly, there must always be 5 to 10 electric locomotives at the junction which are usable on the main tracks. And there is no place from which to obtain them, other than Krasnoyarsk.

In that same report, mention was made of a telegram from the Main Administration of Traffic in the MPS about the need to divert some of the trains onto Abakan's tracks in order to create a locomotive reserve in Tayshet. If this measure is considered to be forced and of short duration, then how and by whom will this order be carried out? It is not clear how many trains are to be diverted, under which circumstances are they to be diverted or who will be in charge of this maneuver.

An analogous proposal was contained in the report by the group of specialists from the NIIZhT. In that report, directions for freight flow were designated--Altay, Kazakhstan, Central Asia--for which Abakan's tracks were hardly a deviation. Moreover, the proposed route change was based not only on the need to create a locomotive reserve in Tayshet, but also to lessen the load on the main tracks and eliminate the lack of parity in train interchange for Tayshet.

This proposal could scarcely be classified as an obvious solution. Abakan's tracks and the Transsiberian Main Line have different carrying and traffic capacities. One must attentively watch how these "extra" trains are written into traffic schedules, for example, at the Novokuznetsk, Belovskiy and Altayskiy divisions of the Kemerovo and West Siberian railroads. However, the fact is indisputable that it would not be a bad idea to double-check the variant with the diversion. The prospect of an equal interchange of trains on the main tracks between the East Siberian and Krasnoyarsk railroads is too tempting. Could it be that this measure alone will completely solve the electric locomotive problem at Tayshet?

To finish with the locomotive issue, we must still talk about an organizational measure, which does not require any expenditures. The amount of daily interchange of trains at inter-railroad junctions is established by the Main Administration of Traffic. The lack of parity is immediately obvious. The situation of previous days is well known. And the Main Administration of Traffic also knows how many electric locomotives the Krasnoyarsk railroad has borrowed and is borrowing to pull trains out of Tayshet. There would be less friction between the neighboring railroad men, there would be better organization if the daily technical plan established precise figures not only for interchange of trains, but also for control of locomotives.

Now we'll talk about the very boundary between the railroads. There are no sections leading up to the junction at Tayshet. The boundary with the Krasnoyarsk Railroad is on the other side of the exit switches. This paralyzes the initiative not only of the train dispatchers, but of the station duty officers.

The following situation arises rather frequently: a train arrives from the neighboring junction and there is nowhere to accept it, since the last tracks are occupied by a through-train which is ready but lacks an electric locomotive. The newly-arrived train, which has been stopped due to a lack of arrival tracks, should be put aside temporarily and an electric locomotive should be moved, which would free a set of tracks. And the "discarded" train can be moved to arrival tracks at any convenient time, even if a switching electric locomotive is used. But on "foreign" territory, you don't give many orders; either you move the train or you won't get an electric locomotive.

The managers of the station and Tayshet Division are not asking for a great deal. They ask that trains be sent to them from the west and from Abakan on one open line and to one station. Incidentally, a similar recommendation is in the report of the group of scientists from the NIIZhT. True, this is a trifle, but it would indisputably help to free the junction quite nicely.

And finally, there is still a detail, about which it is embarrassing to write. Tayshet became a junction station and commercial inspection of cars was set up there. And everything would have been normal if several trains hadn't had tank cars filled with wine. One tank car was being disassembled, another was in a through-train. Several tank cars--several in all! And so Tayshet was on the brink of a stoppage. To check the seal, to see if it were intact, one had to go up to the upper hatch. But this could not be done under a contact wire with a voltage of 27 kilovolts. The train was delayed, a switching locomotive was found, as were open track sections for switching work. A tank car was displayed on specialized tracks. The seal was intact, so the switching work began again.

To ease the situation somewhat in Tayshet, sectionalizers were put on four sets of tracks. At the same time, cars still have to be moved to these tracks. Two linesmen turn off the voltage and ground the wire. With four shifts, this adds up to eight persons. Plus there is the cost of the sectionalizer and the cost of supporting the linesmen and there are idle periods for the cars. There also is switching work, which causes one to ask if the cars are on the right set of tracks.

Renovation at Tayshet is now being carried out on a wide scale. The entire station is a large construction site. Last year, the capacity of one of the shunting yards was doubled right away. New yards, detour lines, bypasses and enterprises are being built.

Based on the results of the first quarter of this year, the East Siberian Railroad was awarded the challenge Red Banner of the MPS and the Central Committee of the trade union. And the railroad workers at Tayshet can rightfully say: "that is our victory, as well." The fact that the neighboring organizations cooperated at the junction also had a lot to do with this success. In other words, they can work together.

Of course, one must acknowledge that Tayshet is still considered to be a junction with considerable problems. Not everything has been done yet to assure that the junction operates precisely and smoothly. But neither is there any doubt that Tayshet is a junction with solvable problems.

From the Editors

When we published the article from the GUDOK correspondents on the Transsiberian Main Line, "Operation 'Junction'" (20 April 1982), we asked the directors of the Krasnoyarsk and East Siberian Railroads, the Main Administration of Traffic in the MPS to inform us about the causes for interruptions of traffic, to which our newspaper called attention, as well as measures taken to correct the situation. Almost a month has passed, but we have nothing yet to pass on to our readers about this problem. Neither the railroads nor the Main Administration have found the time to respond to our newspaper's article. We hope that their answers will arrive in the near future. And they will be given, taking into account the comments and proposals expressed in the article published today.

9887

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RAILROAD

SHORTAGE OF WELL-MAINTAINED ROLLING STOCK CRITICIZED

Moscow GUDOK in Russian 20 Apr 82 p 1

[Editorial: "The Key to Success Is in Coordination"]

[Text] The main thing in the functioning of railroads is a well-defined flow of traffic. However, our transportation conveyor is still operating with stoppages. For a long time, the prescribed amount of traffic has not been fulfilled. For the rail network overall during the first quarter, freight car interchange was 20,600 cars less than planned; in April the shortfall was 16,400 cars. There is a single reason for this: attentiveness to organizing the movement of freight car traffic has been greatly relaxed.

The results of the work in the first quarter are causing a great deal of alarm. The transport plan was not fulfilled. Moreover, freight shipment was less than in the same period last year. And matters were not corrected in April: the shortfalls already exceeded 4.8 million tons. And the shortfalls occurred for vitally necessary freight: ore and metallurgical raw materials, lumber, mineral fertilizers and many other items, no less important.

As a rule, there is a single cause for the shortfalls: there are not enough freight cars. And at the same time, thousands of cars, already loaded and dispatched, can't get through to their destinations. Presently on the rail network, more than 54,000 cars are in transit and another 20,000 cars, again above the norm, have already arrived at the receiving railroad and are waiting to be unloaded or moved to the loading area. The extremely low level of meeting the traffic schedule for freight trains attests to the slowed movement. For example, on the Kuybyshev and South Urals railroads during the first quarter the traffic schedule was fulfilled only at the 46 percent level; on the Volga Railroad, the schedule was met at the 47 percent level; for the North Caucasus and Transbaykal railroads, the schedule was met at the 53 percent and 58 percent levels, respectively.

The slow movement of car traffic results in practically all railroads operating with an excess of cars; some railroads have an enormous excess. And there is a paradox: the loading plan is not being fulfilled, particularly by those mainlines with an excessive amount of cars. For example, take the Oktyabr'sk Railroad. It already has a shortfall of 424,000 tons. Dozens of complaints from consigners are coming to the editors: the railroad workers are not providing rail cars. But the railroad has 14,000 cars above the norm. It even has one-third more empty cars than planned. And there is more than enough local freight.

An excessive fleet of cars hinders maneuverability at a station and the tracks become impassable. It would seem that the primary concern in this instance would be to dispose of the excess fleet and increase the rate of interchange. But it is precisely those railroads which have piled up the largest excesses which are not fulfilling the task for interchange: the South Urals, Gorkiy, North Caucasus, Tselina, Volga and Transbaykal railroads.

Transportation is a living organism. And it is distinct from any other branch of the national economy in that everything in transportation, perhaps more than anywhere else, is interrelated. Each action depends on another action. So, one must work for all and all for one, and all must work together to produce traffic. That is because it is precisely the organization of an uninterrupted flow of car traffic which is the basis of the transportation process.

First, let's talk about the operational and management apparatus. It must provide skillful, competent management of operational work. The traffic manager is now the central figure in transportation. The success of transit depends on how well he manages to organize the work of all the participating services, how well he orients the entire group of workers and how much efficiency, sharpness and far-sightedness he exhibits.

And on the other hand, parochial attitudes and constant squabbling with neighboring organizations lead to ruin. Arkhara--the junction between the Far Eastern and Transbaykal railroads--has become the talk of the town. The acceptance of trains from the west is being delayed at Arkhara and has an impact on the operation of a huge area--practically the entire main course of the Transsiberian Main Line. It would seem that as soon as such a bad situation took shape on the Far Eastern Railroad, one would support one's neighbor and help him out. But that didn't happen.

As Comrade Maslovskiy, deputy chief of the Far Eastern Railroad, reported to the editors, every third train arriving in Arkhara from the west undergoes reclassification. The cars have to be uncoupled for technical and commercial defects, the weight of the train is reduced and numerous violations of the marshalling plan have to be eliminated. When such abnormal relations develop at a junction, there is only one solution: gather the neighboring organizations together, clear up mutual grievances and come to an agreement on joint actions. Incidentally, this has already been proposed by GUDOK in our correspondent's article "Neighbors Squabble, Trains Stand Still." After this article, the railroad agreed upon a meeting, and set a time. But representatives from the Transbaykal Railroad did not appear at this meeting.

The sluggishness of certain dispatchers, who are unable to set up a precise operation, is also causing a great deal of harm.

However, there is little that the most skillful, most efficient and far-sighted dispatchers can do when locomotives go out of order one after another, when there is nothing to pull the trains. Just such a situation arose on a number of track sections. On the Kazan' section of the Gor'kiy Railroad, the diesel engine pool has been neglected and its technical condition is totally

unsatisfactory. As a result, the entire railroad is functioning unsteadily and has hampered the movement of trains both eastbound and westbound. Excessive amounts of transit cars, which should proceed through the junction at Chepets and Druzhinino stations, have already exceeded the norm by 4,500 cars.

Such a bad situation with the diesel engine fleet did not arise just yesterday; for several years this important freight traffic flow has been feverish. But the Main Administration of Locomotives resigned itself to this situation. Moreover, it also resigned itself to the fact that a similar problem is occurring on a number of other railroads.

An unacceptably large number of junction points now are not supporting a normal passage of freight car traffic. And among these points are junctions of a network-wide significance: Petrovskiy Zavod, Tayshet, Kropachevo, Penza, Lokot', Samur and Valuyki.

Now more than ever, iron discipline is needed in transportation. Responsibility must be increased for executing the train traffic schedule, the norms for interchange of trains and regulatory tasks. A merciless struggle must be declared against parochialism, litigiousness and efforts to improve one's own affairs at the expense of one's neighbor, at the expense of transportation overall.

Special attention must be paid to junctions. They are like litmus paper in showing the level of organization for all the work on a railroad or a division. In and of itself, a junction doesn't delay anyone. Trains are delayed by lack of organization, a poor operational situation and the inability to organize a precise operation. Everything that makes a railroad or division "ill" manifests itself at the junction.

Last year, the workers of the Southern Railroad accepted the obligation to open wide the gates of their junctions. Many other groups of workers supported them and the results were gratifying. Unfortunately, this initiative soon subsided. Recently, the workers of three divisions from three fraternal republics--the RSFSR, UkSSR and BSSR--called on all railroad workers to turn their junctions into junctions of friendship. This appeal was far from universally heeded.

The task of managers of all services, party and labor union organizations is to develop universally the competition to accelerate the movement of car traffic and establish coordinated work at the junctions.

Let's have a precise rhythm for train traffic!

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RAILROAD

BRIEFS

NEW TRACK SECTION--Yesterday, a silver section of the BAM [Baykal-Amur Main Line] tracks was laid at Khani Station, located at the convergence of Amurstaya Oblast, Chitinskaya Oblast and the Yakut ASSR. And the first train has already travelled along the entire Amur section, which is west of Tynda. The new section of track was put into operation ahead of schedule. Thus, the construction workers successfully fulfilled the obligations which they accepted in honor of the 19th Komsomol Congress. Overall in four months time, approximately 100 kilometers of steel tracks were laid on the new section, and 1.5 million m³ of earth were moved, which necessitated the blasting of 600,000 m³ of permafrost and hard rock. The bridge-builders erected more than 50 crossings over the cold rivers of the taiga. It was among the bridge-builders in Vladimir Khramtsov's crew from the 54th Bridge-Building Unit, that the slogan originated: "Build the bridges to Khani before the Komsomol congress opens." As is the custom on the BAM, this initiative was taken up by machine operators and linesmen on the tracks. And now the "Tyndatransstroy" [Tynda Transport Construction] trust is passing the baton for track-laying to the "Bamstroyput'" [BAM Track Construction] administration. This entails the initial sub-surface descents, the first stations, the first construction experiments on a meridional route, and involves the entire line from the Transsiberian Main Line through Tynda to Berkakit. Now the entire administration has relocated to the most untamed and complex section of the near North from Khani to Vitim. For a second time, "Bamstroyput'" will lay rails across Yakutiya. But this time, these won't be the rails of the Little BAM, but the main BAM tracks. By laying the silver rails, Ivan Varshavskiy's lineman team marked the departure of the builders, one might say, to the final straight section leading to the unique natural warehouses of Udokan and the entire Transbaykal North. [By SOTSIALISTICHESKAYA INDUSTRIYA Correspondent Yu. Balakirev from Amurskaya Oblast] [Exceprts] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 14 May 82 p 1] 9887

UZBEKISTAN HELPS BAM CONSTRUCTION--Visible bonds of friendship link the construction workers of the Baykal-Amur Main Line [BAM] with fraternal Uzbekistan. The sunny republic is delivering its industrial and agricultural output to the region of the main line of the century. New units of young construction workers are travelling from Uzbekistan to the BAM. In the republic, one week of the shock-work watch in honor of the 60th anniversary of the formation of the USSR was dedicated to the BAM construction workers.

The collective at the Zirabulak Mechanized Repair Plant in Samarakandskaya Oblast successfully labored during the watch to fill a complimentary order for the BAM workers. Now the enterprise is producing six types of small rail cars which can be used, in various modifications, as housing, dining cars, or shower rooms. During the jubilee watch, the plant's workers produced 15 cars in excess of the plan. Forty houses on wheels were sent to the BAM and to Western Siberia. Last year, 1,000 cars were produced, and this year there will be 1,200 cars produced. Among the guardsmen of the 5-year plan at this small enterprise are Murad Radzhapov, who is a communist and foreman of gas-arc welders, Mamat Babadzhanov's team of carpenters and the painters in Natal'ya Svistun's team. Their daily production index is 120 to 130 percent of the norm. [By V. Zhurayev] [Text] [Moscow STROITEL'NAYA GAZETA in Russian 7 April 82 p 2] 9887

ULAN-UDE HELPS BAM CONSTRUCTION--Ulan-Ude, 18 May 82--Today the young workers at the Ulan-Ude Metal Bridge Structures Plant gave a labor gift to the Komsomol congress. A span for the bridge crossing on the Uoyam-Muyakan section in Northern Buryatiya was sent to the BAM [Baykal-Amur Main Line] ahead of schedule and in excess of the plan. A slogan which is particularly popular among the workers competing at the plant is "Do it ahead of schedule for the BAM!" The plant was established because of construction of the Transsiberian Main Line. [TASS] [Text] [Moscow GUDOK in Russian 19 May 82 p 3] 9887

BAM CROSSES RIVER--Blagoveshchensk--Yet another water obstacle has been subdued by the BAM [Baykal-Amur Main Line] construction workers. They completed, ahead of schedule, the installation of a 700 meter railroad bridge across the Selemdzha River. The BAM's steel rails won't arrive in the area until the end of the year, but the bridge has already begun to operate: columns of trucks with loads for the construction project have moved across the bridge from the construction workers' large base at Fevral'sk. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 22 Apr 82 p 1] 9887

NEW BRIDGE FOR BAM--Zeya (Amurskaya Oblast)--The construction workers of the eastern section of the BAM [Baykal-Amur Main Line] have conquered the largest water obstacle after the Amur River. Yesterday, the final construction train crossed the 1,100 meter bridge which joins the shores of the man-made Zeya Reservoir. The State Commission accepted this unique structure one month earlier than planned, with an "excellent" evaluation. The young construction workers are dedicating their labor victory to the upcoming 19th Komsomol Congress. [Text] [Moscow TRUD in Russian 16 May 82 p 1] 9887

PROBLEMS ON SOUTHERN RAILROAD--The Southern Railroad is operating with an excess pool of about 2,500 cars, whose turn-around time has been slowed down by .2 of a day. [Excerpt] [Moscow GUDOK in Russian 4 May 82 p 1] 9887

BAKU SUBWAY CONSTRUCTION--Baku--The drillers from Moscow have carried out an important task in constructing the Baku subway. A series of apertures, which will assure a considerable lowering of the water level in the drainage area, have been drilled ahead of schedule. The specialists from the capital have opened up a front of work for their colleagues in Azerbaijan to quickly drill the tunnel to the future new station. [Text] [Moscow TRUD in Russian 11 May 82 p 1] 9887

LOVIISA SPENT NUCLEAR FUEL TRANSFER--Imatran Voima plans to ship a second portion of spent nuclear fuel to the Soviet Union next month. The shipment, which is to go from Loviisa through Lahti, has received approval from the Nuclear Safety Commission. It is intended that altogether 14 tons of highly radioactive nuclear waste removed from the Loviisa 1 reactor in 1979 will come from Loviisa. The transfer of the waste will take place on four specially prepared railroad cars in the same manner as in August of 1981. Special transport equipment and an escort team will arrive from the Soviet Union in Finland on 4 August. About three weeks is the time expected for the work to be completed. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 25 Jul 82 p 15]

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OCEAN AND RIVER

THE GAS CARRIER 'SMOL'NYI'

Moscow MORSKOY FLOT in Russian 6 Jun 82 pp 37-40

[Article by V. Fadeyev, Supervisory Mechanic of Black Sea Navigation Company, and V. Savin, Senior Mechanic: "The Gas Carrier 'Smol'nyy'"]

[Text] Black Sea Navigation Company operates two gas carriers of the "Mossovet" class (MORSKOY FLOT, No 4, 1980) and more recently the gas carrier "Smol'nyy" was received. All these vessels which were built at the Breda shipyards in Italy have common and different features and equipment.

The gas carriers have been built for the class of the USSR Registry MOL2 2 A1 (gas carrier) and are single-deck vessels with a bulb bow, a transom stern, with a double bottoms and stern placement of the engine room. They are designed to transport liquified gases with a maximum density of 0.685 tons/m³ at a minimum temperature of -48°C at a pressure of around 2.5 kilopascals. Such cargo includes ammonia, butane, propane, propylene, a mixture of butane and propane, butadiene with an arrester and butadiene. Moreover, the diesel vessel "Smol'nyy" is adapted for carrying vinyl chloride.

The particular features of operating gas carriers of the classes "Mossovet" and "Smol'nyy" to a large degree are determined by the differences in their size and, respectively, the capacity of the cargo tanks. At present, the world production and loading facilities for ammonia and petroleum gases are still little equipped with specialized deep water terminals and sufficiently large capacity for storing liquified gases. This also is responsible for the fact that the operating range of large gas carriers like the "Mossovet" to a definite degree restricted. Smaller sized and smaller capacity vessels such as the diesel vessel "Smol'nyy" are more to the liking of the characters and they can transport small batches of cargo corresponding to the capacity of the shore storage facilities in the world's ports. This substantially increases the turnover of gas carriers like the "Smol'nyy" and leads to an increase in income per unit of operating time.

During the building of the diesel vessel "Smol'nyy" consideration was given to the comments of the acceptance commissions of the previous gas carriers as well as the damage claims for these vessels. Moreover, the recommendations and proposals of specialists from the Leningrad TsPKB [Central Design Bureau] were taken into account following the results of the investigation and testing of the gas carrier "Mossovet" and individual comments of inspection bodies (sanitary, labor safety and so forth).

Basic Specifications

Length:	
Overall	196.8 m
Between perpendiculars	184.5 m
Extreme beam	29.0 m
freeboard	17.8 m
Cargo draft	10.1 m
Capacity of gas tanks	
with 98 percent-filling	37,544 m ³
Displacement	41,126 tons
Deadweight	27,970 tons
Tonnage:	
Gross	25,663.3 reg. t
Net	14,015.3 reg. t
Speed	17.2 knots
Range	16,000 m

The gas carrier "Smol'nyy" is powered by a crosshead-type, reversible, single-action gas turbine supercharged main engine of the type 7DKPN 80/160-4 which develops a maximum continuous power of 13.6 megawatts.

The ship power plant consists of four driven motors of the type 5S28LH with a power of 0.9 megawatts each at a speed of 750 rpm and four Italian-produced brushless generators with a power of 800 kilowatts each. In terms of the composition of the electrical equipment and the electric power distribution network, the diesel vessel "Smol'nyy" does not differ fundamentally from the two previous gas carriers. The basic differences are related to the reduced power of the ship electric plant caused by the fact that a majority of the vessel's equipment has a smaller powered electric drive.

For serving the main engine the vessel carries two oil pumps with a delivery of 380 m³/hour each, two water cooled pumps (each with 620 m³/hour) and two fresh water cooling pumps (each of 420 m³/hour). The diesel generators are cooled by seawater using two pumps delivering 130 m³/hour each. The eight cargo pumps deliver each 380 m³/hour. Moreover, there are two fire pumps and one emergency fire pump all delivering 180 m³/hour each, two ballast pumps of 500 m³/hour each, a drainage pump of 60 m³/hour and seawater cooling pumps for the following units: inert gas (one) of 860 m³/hour and the cargo unit (two) of 380 m³/hour.

The three Sulzer gas compressors of the K140-2A type have a cooling productivity of 200 megacalories/hour each.

The engine room automation system is analogous to the systems on the "Mossovet" and "Lensovet" gas carriers, with the exception of minor changes made on the basis of the trial and operating experience on these vessels and aimed at increasing the operating reliability and accuracy of the system.

The contractual specifications provided for the installation of a bronze four-bladed, constant pitch propeller. However, in the process of working out the

design by the Norwegian Veritas Bureau, from the results of studies it was proposed that the yard alter the number of blades from four to five in the aim of reducing vibration.

The radio hut is located on the starboard side in order to be away from noise on the portside (the elevator, fan, galley and so forth) as well as for improving the overall layout of the quarters. As on the other two gas carriers, provision has been made for a lowering signal mast. For improving living conditions, work has been done to alter the layout of the inner quarters and their equipment.

From the results of operating the previous gas carriers, on the diesel vessel "Smol'nyy" a change has been made in the individual designs of the ship equipment and systems. Thus, a pipeline has been run from the main engine's diesel fuel service tank to the diesel generators. This has increased the invulnerability of the ship power unit; in the system for taking on and pumping fuel, an additional pipeline has been run for pumping fuel into the diesel fuel service tank. This makes it possible to more fully utilize the capacity of the fuel tanks as well as to reduce the time and improve the fueling conditions. Moreover, in addition to existing warning system of a maximum level in the fuel overflow tank as well as in the diesel fuel storage tanks in the double bottom, a warning system has been installed for a maximum filling level. This helps to prevent overflowing in fueling.

For reducing the electric load while underway, on the gas carrier "Smol'nyy" pipelines have been run which make it possible to shutdown while under way the seawater cooling pumps for the diesel generators and the pump of the desalinization unit. In the main engine cylinder lubricating system, a pipeline has been installed making it possible, when necessary, to use three different types of cylinder oil. An additional tank for collecting used oil has been installed. The basic and auxiliary oil tanks are connected to the continuous separation system. A possibility has been provided of filling the afterpeak with distillate from the desalinization unit as well as receiving and pumping distillate from the afterpeak.

In addition to the system for supplying separated heavy fuel to the service and settling tanks, provision has also been made to deliver it to the tanks for the stern heavy fuel supply as well as deliver the heavy fuel from the port stern supply tank to the service tank of the auxiliary boiler. Into this same tank fuel is pumped from the nozzle pump in the event of using this tank as a service tank. The vessel carries a system for filling the service tank of the emergency diesel generator through the diesel fuel separator.

In the gas system of the diesel vessel "Smol'nyy", the experience of building and operating the first vessels has been taken into account. Thus, the laying out of the piping has been altered and the positioning of equipment and devices has been improved for the convenience of their maintenance. A portion of the gas pipes has been moved from the starboard side to the roof of the compressor department and this has made it possible to make a second outlet from the compressor department to the starboard side. Manually adjustable bypasses have been installed for fully loading the vaporizers on the automatic freon delivery line.

On the gas carrier "Smol'nyy," in the work areas around the mooring and anchor equipment, the decks have been covered with paint containing a mixture of quartz sand. The appearance of these areas differs somewhat from the surface of the decks painted in the conventional manner. In the process of operating the three gas carriers, the high nonskid properties of the designated type of painting have been noted.

It is also essential to take up certain design shortcomings disclosed in the process of receiving the gas carriers and in operating them. The noise levels determined during the period of accepting the diesel vessel "Smol'nyy" were higher than on the gas carriers of the "Mossovet" class. An increased vibration level is noted on all the gas carriers. Obviously, vibration was one of the reasons for the shearing off of the propeller cones on both previous vessels. Probably another consequence of the vibration is also the rapid sagging of the generator shaft bearings, resulting in the failure of the diesel's bearings.

On the gas carrier "Smol'nyy," the choice of the capacity for the ship electric plant diesel generators cannot be considered successful. When underway under tropical conditions, in operating the engine room ventilating system, the required capacity is over 700 kilowatts and this cannot be delivered by operating one diesel generator. Two diesel generators must be operated under loads not permitting 50 percent of the rated (according to the setting of the control and automatic system, the starting up of the reserve diesel generator occurs when it reaches a load of 84 percent of the rated, that is 680 kilowatts). It would have been more rational to install three 6-cylinder diesel generators of 960 kilowatts each and one turbo generator of 900-1000 kilowatts (with the increased capacity of the recovery boiler). In this instance, running conditions, without operating the gas liquification unit, could have been met by the operating of one diesel generator (or turbo generator) with a load of 70-80 percent. Here fuel savings from the use of the turbo generator would have been five tons per day.

The large unit producing inert gas on all three of the gas carriers when they are being used to transport ammonia cannot be employed in cleaning the gas tanks of ammonia for repair work on the vessels, in changing the type of cargo and so forth. The reason is that the composition of the produced inert gas includes around 15 percent carbon dioxide (CO_2) which interacts with the ammonia forming carbamide. Carbamide crystals, in getting into the pipes, pumps and metering equipment can cause them to fail. At present the Odessa Institute for Naval Engineers, at the request of the Black Sea Navigation Company, is working on modernizing the inert gas system in the aim of removing the obtained carbon dioxide gas and the possibility of using it in transporting the ammonia.

PHOTO CAPTIONS

1. p 38. The gas carrier "Smol'nyy"
2. p 38 The main deck.
3. p 38 The wheelhouse
4. p 39 The Red Corner
5. p 39 The central control room

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OCEAN AND RIVER

WAYS TO INCREASE SHIP REPAIR EFFICIENCY REVIEWED

Moscow VODNYI TRANSPORT in Russian 17 Jun 82 p 2

[Article by Candidate of Economic Sciences Ya. Rozhinskiy, Chief Economist of the Zhdanov Ship Repair Yard: "The Way to a Unity of Interests"]

[Text] One of the most urgent problems which determines the organization of ship repairs at the yards is an acceleration of ship flaw detection. The more quickly this is completed the sooner the cost of the repairs can be determined, the more quickly the local contracts are concluded, the sooner all the necessary data are available for computer calculations of optimum operating conditions at the yards and the better all the internal yard planning. An acceleration of flaw detection makes it possible to sooner provide the ships under repair with yard-produced semifinished products which have a long manufacturing time such as castings and forged pieces and a greater reserve of time is available for seeking out special and limited-availability materials.

Why does ship flaw detection last so long at the yards? Here the difficulty is related to several conditions. In the first place, it is essential to carry out much preparatory work such as the opening up and disassembly of numerous assemblies and units. Secondly, in flaw detection of equipment it is essential to maintain a succession of work as it should be disassembled by the same brigades which will later reassemble it. Thirdly, in the shops there is a definite specialization of the brigades and if they are engaged on a project nearing completion which ordinarily are under increased supervision, it is difficult to organize the shifting of them to vessels which have just arrived for repairs. Sometimes the brigades themselves are against this as they are interested in completing the orders for commenced work. The acceleration of flaw detection is further complicated if several brigades from different shops must work together on one project.

But while organizationally the acceleration of flaw detection is complex, is it really impossible to speed up the obtaining of initial data for price formation? It turns out that it is possible if flaw detection is divided into costing and technological flaw detection. For example, a calculator is not needed to know what ellipticity, conicity or barrelling have formed in a certain shaft and whether it will be machined by 0.05 mm or by 5 mm. What is essential to know is whether the shaft will be machined or not since the cost of machining does not depend upon its output.

Most often it is possible to establish the need for castings and forged pieces visually before the end of the full flaw detection or by questioning the ship officers. Even if the ship mechanics doubt the need for replacing individual parts it makes sense to order them as they are always an effective reserve and ultimately can remain in the yard's basic stock for the repair of this series of vessels in the future. This must be emphasized because the early ordering of semifinished products is of essential significance for accelerating the work. Often the brigades after the disassembly of equipment for flaw detection are forced to interrupt the work while waiting for semifinished products and their machining. The return of them to former work always involves losses.

Why then are the costing calculations of the work sometimes held up? The problem is that in practical terms the category of repairs for no mechanism or complicated assembly coincides precisely with the amount of current or major overhaul found in the price lists. Here it is also essential to consider certain accessory work which is not envisaged in the price lists. For this reason the calculators wait for complete technological flaw detection in order to enter in the estimate for a certain addition bolt; "bolt to be forged, machined, drilled, tinned and so forth."

The samplings made by us from the repair estimates for many vessels have established that these and other minor accessory work in terms of the number of estimate paragraphs comprise 20-26 percent and they usually cost 2-5 percent of the total cost of the work. This means that a quarter of the skilled labor of the production engineers and calculators is wasted, the computers are overworked and the number of documents is increased. The main thing is that the costing of the work is held up.

How can the price lists help in eliminating this situation? It is very simple. They should be broken down to such a level that the costing is carried out in terms of the characteristic features of each job, without the right of adding to or reducing the price lists.

For example, if in the repair of a certain pump, only the shaft has to be repaired or replaced, then this is repair No 1, if the vane is to be replaced, this is repair No 2, if the housing is to be repaired, then this is repair No 3. No additions or reductions in the cost of the pump repairs should be permitted. Only then will there be no need to wait for the flaw detection of each bolt or cleat for determining the cost of the repairs.

Strictly speaking, to one degree or another each yard individually divides flaw detection into costing and technological when it is still necessary to know the price without waiting for the complete flaw detection. But this is a deviation from the current rules; at the same time it should be at the basis of the rules.

Thus, the breaking down of the price lists within reasonable limits will make it possible to accelerate price formation and thereby facilitate internal yard planning and correspondingly accelerate ship repairs. Particularly as for this at present there is every opportunity in line with the sharp increase in the memory of new computers.

The charging of clients for the cost of docking the vessels is presently carried out proceeding from the normed time for the standing of the fleet in the docks. It is determined by dividing the estimated labor intensiveness of docking work by the ministry-approved rate of average daily output for the corresponding displacement tonnage of the ship.

Each lifting of a vessel in the dock requires significant expenditures of fuel and electric power as well as lumber for blocks and wedges, the cost of which is included in the drydock rate. Each reflooding of the drydock requires the all-hands assembly of the entire crew and during this period it is virtually impossible for the workers of the dock shops to work on the vessel. In other words, each such operation involves significant expenditures which are not proportional to the current docking rates. On the other hand, with the standing of the vessel in drydock, the reverse picture is observed as payment is higher than expenditures. For this reason the yards are not interested in brief drydockings.

In recent years, the fleet has been oriented at brief, preventive drydockings and it is essential that the yards also be interested in this. For this reason it is significantly better and economically more justified if the clients pay the yards separately for the raising and lowering of the vessel and separately for the standing of the vessel in drydock. As a total the cost of drydocking the vessels will not increase; the cost of raising and lowering the vessels will rise by the same amount as the payment for their standing in the drydocks will decline. But, in the first place, here the expenditures of the yards will be more correctly compensated and, secondly, an additional incentive will appear for the yards to accelerate the drydocking as each flooding means an increase in income.

Such a principle, incidentally, exists in many nations when a higher rate is charged for the first days of drydocking than for subsequent ones.

The ship repair price lists have been drawn up considering the use of progressive production methods and they take into account the future rise in labor productivity, a minimum amount of accessory work and so forth. They are rather rigid and with even the most insignificant deviations in the work descriptions from the standard ones in the price lists, the yards endeavor to carry out the costings using the standards and production methods in effect at the ship repair yard. The ministry watches this in regularly checking the level of price list work and demanding that the yards submit work to be repeated for approval and incorporated in the price lists. However a rise in the proportional amount of price list products is not properly encouraged and is not compared with the achieved profitability level of ship repairs.

It is important to settle the question of arbitration in instances of disputes over the cost of ship repair work. The problem is that the yards are subordinate to the navigation companies which act as two persons: as the clients and as the superior organizations. With disputed questions the yards have virtually no opportunity to resort to arbitrators. In order that the yards and navigation companies do not burden down arbitration with numerous disputes, it must be paid for with the costs paid by the guilty party.

It would be good to start publishing bulletins on price formation questions. They could publish both the arbitration rulings (this would eliminate many disputes) as well as the analyses of yard audits. The problem is that the ministry regularly makes planned checks on the condition of price formation at the yards but the discovered shortcomings are known only by that ship repair yard where the check was made, with the exception of instances of major violations when orders are issued through the ministry. The reviews of the checks would provide much benefit, as the yards could establish self-control.

We feel that a solution to the above indicated problems would aid in organizing ship repairs.

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END